

Our World, Our Task

On this **vulnerable** and interconnected planet, the physician's mission of healing must extend beyond borders—the borders of nations, the borders of clinics and laboratories, and the borders that separate individuals.

PIONEER

After earning a medical degree in 1946, Rita Kelley began a 38-year career at Massachusetts General Hospital, eventually becoming acting chief of oncology and a clinical professor of medicine at Harvard Medical School. Kelley also became an internationally known cancer specialist, coauthoring pioneering papers on the use of chemotherapy in treating breast cancer. At the time of her death in 1981, she was remembered particularly for her clinical skills, her compassion, and her dedication to her patients.



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In This Issue

NICCOLÒ MACHIAVELLI (1469–1527) CONTENDED THAT FORTUNE, GOOD OR bad, accounts for at least half of what happens in anyone's life. In *The Prince* he takes the example of devastating storms, which, with a surprisingly modern, materialist outlook, he regards as a matter of bad luck. But, he says, the damage they do may be ameliorated because people, endowed with foresight and will, can plan public works to channel the runoff and abate their consequences. Alfred Nobel (1833–1896), who discovered dynamite partly by chance, made an enormous fortune from it and then surprised his friends and potential heirs with a will establishing his prizes, which he hoped would channel the unpredictable processes of discovery, literary creation, and politics in directions favorable to humankind.

Four HMS winners of the Nobel Prize spoke at Alumni Day this spring—Thomas Weller '40 (1954), David Hubel (1981), Bernard Lown (1985), and Joseph Murray '43B (1990). Their reminiscences, printed in this issue of the *Bulletin*, do not obscure the role that happenstance played in the unfolding of their careers. None of them describes a life prepared since kindergarten for greatness (although one suspects that they were very, very good in kindergarten). Nor does any of them describe taking single-minded aim at the Scandinavian committees. They give the impression that they were pursuing, or were about to be pursuing, other paths, when their trajectories veered toward Stockholm.

In each narrative there is a turning point that will be recognized years or even decades later as the right place at the right time. At this moment, each seems to have said to himself, "Yes, this is it," and after that knew what he was doing. The intrinsic worth of the task took on a life of its own: growing deadly viruses in cell culture; probing the brain to find cells that chatter when an image appears before the eye; staring down the potentially reckless masters of nuclear weaponry; and undertaking to move organs from one body to another that needed them more. Each of these men appears to have come to a moment in his career when a decision trumped chance, and his course became obvious to him.

I cannot but surmise that Nobel's wager is working. For all that his prizes have had their idiosyncrasies of taste and politics, they are powerful influences in favor of inquiry, decency, and fearlessness.

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Mind Your Manners

I appreciated Alice Flaherty's article, "Good Bedside Manners," in the Autumn 2005 issue of the *Bulletin*. It is true, as she says, that "when you're tired, or dislike a patient, it's easier to

behave empathetically than to feel empathy," and that "behaving empathetically can even produce true empathy."

By focusing solely on behaviors and rituals that seem to express concern for the patient, however, Flaherty ignores the importance of the physician's emotional responses as clues to understanding meaningful aspects of the patient's behavior. Not only is the physician who

recognizes her own emotional responses much less likely to allow unconscious hostility toward the patient to influence her treatment, but she is also much better equipped to discover what it is about the patient that is annoying her or making her feel sad or uncomfortable. Once the patient's depression, dependency, hostility, self-destructiveness, or other maladaptive behavior has been identified, the physician is much better able to develop a treatment plan that will be effective with that particular patient.

CAVIN P. LEEMAN '59
NEW YORK, NEW YORK

Earning Her Stripes

On behalf of the Wilson's Disease Association, I would like to thank you for publishing "Pieces of the Puzzle" in the Winter 2006 edition of the *Bulletin*. It is our hope that stories such as this one, depicting Bob Walters's search for a diagnosis and good fortune in finding Kai Xia '99, will encourage other physicians to look for the "zebra."

A good portion of the association's work is to educate physicians to "think Wilson's disease" when the appropriate symptoms present themselves. Far too often we see the unfortunate outcome of patients who have been misdiagnosed or not diagnosed in a timely fashion. We would love to see every patient return to

good health as Mr. Walters has. Kudos to Dr. Xia for her lifesaving diagnosis!

MARY L. GRAPER
PRESIDENT, WILSON'S DISEASE
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WOOSTER, OHIO

Words to the Wise

Frank Fisher's article ("Pain Killer") in the Winter 2006 edition of the *Bulletin* is excellent. I mentioned the article in a forum of prominent dermatologists (more than a thousand from all over the world) and was asked whether I could post the article for members to read. In that same issue, I felt very moved by James Eadie's piece on his experiences in Iraq.

MASSAD GREGORY JOSEPH '77
SOUTH PASADENA, CALIFORNIA

Giving Good Weight

The review by Elissa Ely '88 in the Spring 2006 issue of the *Bulletin* must be praised for exposing the naive logic of the book being reviewed: *Perpetual Youth*, by Muriel Gillick '78. The review makes apparent a warped conception of what is important to the elderly. The proposed approach is typified by the suggested choice that the health care system must make between screening for hearing loss and poor balance versus prostate cancer. First, it is not established that these are mutually exclusive. Second, it seems to be suggested that people with hearing loss and impaired balance are so bereft of their faculties that they cannot seek help for these conditions. Third, the author seems to imply that a living elderly person with a hearing aid is preferable to a person who has died unnecessarily of prostate cancer.

Prostate cancer is curable, and a 70-year-old who is diagnosed and treated appropriately will probably have 10 to 15 good years ahead of him. Hearing loss is ubiquitous and can be treated with conventional hearing aids. A loss of 30 to 35 decibels is not uncommon before the problem becomes socially difficult, and substantially more loss occurs before someone is incapacitated. Loss of balance has many etiologies, but the common treatable ones can be approached with exercise and mental stimulation. To forgo prostate treatment for people facing a significant life-shortening disease while advocating broad asymptomatic screening for non-threatening maladies that should be diagnosable through ordinary social contact seems misplaced.

C. FORBES DEWEY, JR.
CAMBRIDGE, MASSACHUSETTS

The Bulletin welcomes letters to the editor. Please send letters by mail (Harvard Medical Alumni Bulletin, 25 Shattuck Street, Boston, Massachusetts 02115); fax (617-384-8901); or email (bulletin@hms.harvard.edu). Letters may be edited for length or clarity.

Flexible Stems

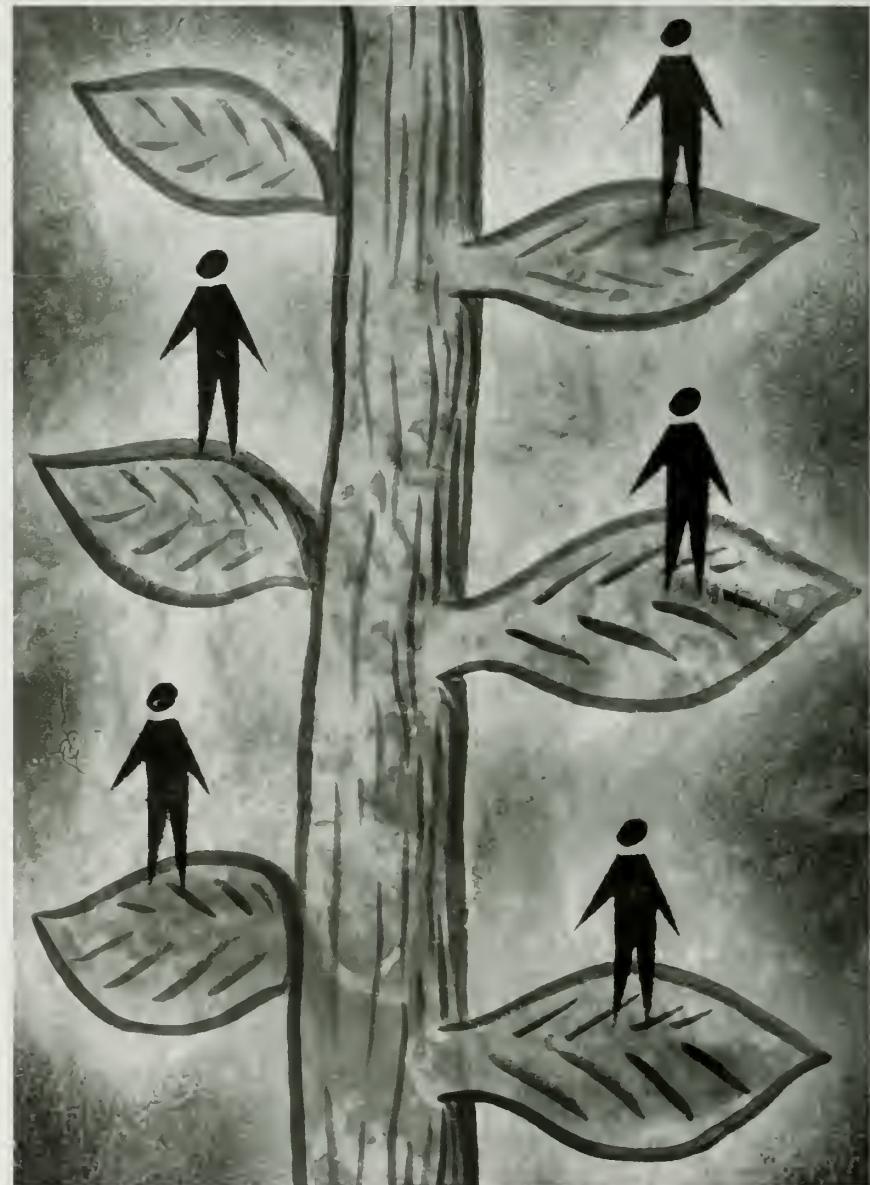
IT'S A GO. RESEARCHERS AT HARVARD, Children's Hospital Boston, and the Harvard Stem Cell Institute (HSCI) have been given the green light to begin experiments using somatic cell nuclear transfer (SCNT) to create disease-specific stem cells. Approval for this effort follows more than two years of ethical and scientific review that involved up to eight institutional review boards and stem cell oversight committees at five different institutions.

The decision gives the nod to what is believed to be the first noncommercial U.S. effort to use human embryonic stem cells in a series of experiments that have been successfully undertaken in animal models. Because the federal government has placed restrictions on research using human embryonic stem cells, all research by scientists in the initiative will be supported with private funds.

Task Masters

The work will be conducted by three groups. One will be led by George Daley '91, an HMS associate professor of biological chemistry and molecular pharmacology at Children's Hospital. Two other groups will be headed by HSCI senior investigators. Douglas Melton, codirector of HSCI and Thomas Dudley Cabot Professor of Natural Science in Harvard's Faculty of Arts and Sciences, will lead one HSCI team, and Kevin Eggan, a principal faculty member at the institute and an assistant professor in Harvard's Department of Molecular and Cellular Biology, will lead another. HSCI is a scientific collaborative that involves 99 principal investigators and scores of other scientists in laboratories throughout Harvard University and many of its affiliated hospitals.

The principal researchers will each zero in on a different disease or disease



group. Daley and his team have begun experiments in his focus area: blood disorders. In 2002 Daley was among the principal scientists who demonstrated in a mouse model that SCNT could be used to treat immunodeficiency.

Melton's work will concentrate on using stem cells to combat diabetes; his

investigations began after two of his children were diagnosed with the disease. Since 2004, he has created 28 cell lines.

Eggan will initially collaborate with Melton on diabetes but then plans to turn his attention to neurodegenerative diseases such as amyotrophic lateral sclerosis, also known as Lou Gehrig's disease.



Divide and Conquer

Embryonic stem cells, eponymous with their tissue of origin, are harvested from fertilized eggs at a stage during early development known as the blastocyst. Considered something of a "master cell" of the body, an embryonic stem cell is immortal, in that it can replicate as long as a food source is available, and it is capable of developing into any type of tissue. It is this chameleon quality that gives these cells such promise; a goal of the Harvard researchers is to harness this quality so the cells' differentiation process can be orchestrated. Scientists hope, for example, to direct cells to become pancreatic islet cells that would produce insulin for diabetics.

The primary push for the Harvard scientists, however, will be to take the promise of these cells further by using SCNT, also known as therapeutic cloning, to produce disease-specific stem cells that genetically match a patient's DNA.

Therapeutic cloning of human cells would begin with a nuclear exchange—the nucleus from a skin cell, taken from a person with a particular disease, is snugged into a nutrient-packed, enucleated egg that has been fertilized in vitro. The egg is stimulated to divide, forming genetic offspring to the patient's cells. The division process is halted after the blastocyst forms. The embryonic stem cells are harvested and cultured in a laboratory where researchers would then direct their differentiation into the type of tissue required by the patient—an islet cell, for instance, that now not only produces insulin but was also completely compatible with the patient's immune system—eliminating the need for immunosuppressive drugs and the worry over tissue rejection.

Proceed with Caution

Although scientists point to the great medical benefit such research could well

BY THE NUMBERS

THE 2006 HONOR ROLL OF AMERICA'S BEST HOSPITALS, ASSEMBLED BY U.S. News & World Report, has ranked HMS-affiliated Massachusetts General Hospital (MGH) fourth and Brigham and Women's Hospital (BWH) 11th among the 14 institutions in the nation that made this year's list.

MGH received additional recognition by garnering top-ten berths in 11 specialties: psychiatry, endocrinology, neurology and neurosurgery, orthopedics, digestive disorders, heart and heart surgery, kidney disease, respiratory disease, gynecology, rheumatology, and urology. This is the 11th straight year MGH snagged first place in psychiatry.

Lead-ten standings were earned for six BWH specialties: gynecology, heart and heart surgery, rheumatology, kidney disease, endocrinology, and digestive disorders. The hospital ranked among the top 50 in neurology and neurosurgery, respiratory disorders, orthopedics, urology, cancer, and ear, nose, and throat care.

Other Harvard-affiliated hospitals also received recognition for their programs. Children's Hospital Boston won a second-place rank in pediatrics. Massachusetts Eye and Ear Infirmary took three in ear, nose, and throat and four in ophthalmology. McLean Hospital scored a fourth-place ranking in psychiatry while Dana-Farber Cancer Institute placed fifth in cancer care.

In the category of rehabilitation, Spaulding Rehabilitation Hospital ranked seventh. Beth Israel Deaconess Medical Center ranked among the top 50 nationally in the categories of endocrinology, digestive disorders, respiratory disorders, heart and heart surgery, cancer, and kidney disease. ■

bring, the work is controversial because it requires researchers to stop the cellular division of a fertilized human egg artificially, a consequence considered by some to be the equivalent of destroying a human life. To address this perception, in 2001 President George W. Bush announced that federal funds for research on human embryonic stem cells would be limited to cells derived from lines cultivated before August 2001. Scientists soon reported, however, that only 21 of the more than 60 so-called presidential lines provided material viable for research.

Researchers have increasingly looked to use newer lines developed independent of government support. HSCI has been a leader in providing "ineligible" lines; since 2003, it has supplied 667 stem

cell batches to other laboratories, a figure nearly three times that distributed by the National Stem Cell Bank in Madison, Wisconsin, the largest source of cells sanctioned for studies using U.S. funds.

Research using non-presidential cell lines must adhere to strict cost-allocation protocols; those governing Harvard's initiative were hammered out during the two-year discussion phase. The protocols cover a range of details, including informed consent and compensation for people donating eggs, the purchase of laboratory equipment, and time allocation for scientists working on eligible and ineligible research projects. A document about Harvard's protocol can be found at www.provost.harvard.edu/policies_guidelines/stem_cell_FAQs.pdf. ■

Virtual Realities

Screen Time

A video based training program developed at Children's Hospital Boston aims to bolster the "relational care" skills that pediatric care professionals need when delivering difficult news to children and their families. The multidisciplinary Program to Enhance Relational and Communication Skills, or PERCS, helps participants assess their performance by videotaping them during mock conversations with actors. Constructive critiques follow with the goal of building or strengthening the caregiver's empathetic delivery of painful news. PERCS is codirected by Elizabeth Rider '91, the director of programs for communication skills at the John D. Stoeckle Center for Primary Care Innovation at Massachusetts General Hospital. Robert Truog, a professor in HMS's division of medical ethics, is the program's principal investigator.

A Going Concern

Improving physician literacy on health care policy is the goal of a new website run by the Harvard/Commonwealth Health Policy Education Initiative, an effort of HMS students. Founders Sachin Jain '07 and Kiran Kakarala '06, now an otolaryngology resident at Massachusetts Eye and Ear Infirmary, hope the site's content will lead visitors to devise strategies that could improve national health care. The site, www.improvehealthcare.org,

is hosted by the School's Department of Health Care Policy, whose chair, Barbara McNeil '66, serves as the initiative's faculty advisor.

Mission Control, Do You Read Me?

A wi-fi monitoring system that tracks the condition and location of emergency department patients is being tested at Brigham and Women's Hospital (BWH).



ILLUSTRATION BY TOM GAULD

The Scalable Medical Alert and Response Technology (SMART) sensor system feeds data from a blood oxygen sensor and electrocardiogram sensors into a

"pocket PC" the patient carries in a fanny pack; the data transmits via wireless technology to a nurse's station for monitoring. A transponder in the pack emits ultrasound signals to sensors throughout the hospital, continuously pinpointing the patient's location. SMART was developed by a multi-institutional team headed by Lucila Ohno Machado of BWH's Decision Systems Group and including Robert Greenes '66, director of the systems group, and Thomas Stair '75, an HMS associate professor of emergency medicine at BWH.

Rules of the Game

"Social playbook" software developed by Ronald Calvano, an HMS instructor in neurology at Massachusetts General Hospital, is being given a test run by teenagers with a form of autism known as Asperger's syndrome. Using personal digital assistants, or PDAs, loaded with the software, the eight participants—students at the League School of Greater Boston—chronicle their daily interactions and evaluate their moods, performance, and confidence. The program then serves as a quick source of social and organizational tips they can reference when facing challenging situations. The hope, according to Calvano and other members of the team researching the electronic

prompt, is that the social-norm reminders will become ingrained habits, permanently increasing the teenagers' social skills. ■



Slip Sliding Away

FOR THE PAST YEAR IT HAS BEEN MY PRIVILEGE TO SERVE as your president. Just as one of the highlights of my medical school time was exposure to a talented and motivated group of classmates, getting to know the other members of the Alumni Council and feeling their devotion to Harvard Medical School and to medicine has been similarly exhilarating. I still marvel at how HMS continues to attract such great people to work and study there, which seems to result from a combination of institutional culture, the setting of high expectations, and—of course—garnering adequate resources.

Yet, my pleasure at returning to my medical alma mater and rejoicing in its good fortune is tempered by the sense that medicine in this country is in trouble these days. Our problems persist despite the fact that never before in human history have we been able to do so much to combat illness,

ical student debt, the desire to buy a nice home at a time when housing prices are stratospheric, and the wish to carve out sufficient personal space to enjoy a comfortable lifestyle, and it is no wonder that so many doctors are conflicted about just what the profession of medicine entails.

Medicine is still a wonderful field, and I am proud that both our sons chose to be doctors. But there are ominous trends, absentee leadership in the profession, and a seeming reluctance among the public and its leaders to confront medicine's challenges. Many HMS alumni have been engaged in trying to make medicine better. They have done so in a variety of settings and roles, and sometimes with different perspectives and agendas. I believe, though, that the forces that drive escalating medical expenditures and worsening health care coverage will accelerate in the years to come. If our country cannot analyze, debate, and resolve these problems



Medicine in this country is in trouble these days. Our problems persist despite the fact that never before in human history have we been able to do so much to combat illness, prevent disability, and preserve life.

prevent disability, and preserve life. Several decades ago a seasoned policy analyst described this phenomenon as "Doing better and feeling worse." In fact, we are doing better. Despite the new epidemics of HIV/AIDS and obesity we have never been healthier. So why are we feeling worse?

In part we feel worse because to practice medicine in 2006 means confronting the fundamental problems of rising costs and inadequate health insurance that intrude into the practice setting but for which there seems neither the political will nor adequate professional leadership to resolve, or even to address. During my professional lifetime the share of expenses from medical care has tripled, going from 5 percent of gross domestic product to 16 percent. Because medicine is now big business, those who pay for it and gain from it intrude much more into the practice of medicine and doctors feel less in control. It is also possible—and tempting—to make much more money from medicine than it was a generation ago, either by choosing a lucrative specialty and practice style or by entrepreneurial medical activities. Add to this the pressures induced by med

in a fair and timely manner, I fear everyone will suffer—the public, patients, and the medical profession.

Recently I wrote an article titled "Don't Let Medicine Lose Its Soul." Perhaps that title seems a bit histrionic, but it reflects my concerns, and the concerns of many colleagues, that medicine today is in a perilous place. Harvard graduates have played major leadership roles in the past, but unless we, and our colleagues, can stand up for what are the best solutions for the people of this country, we will leave a legacy of an underperforming health care system staffed by too many disappointed and disenfranchised physicians. Let's try our best to ensure that such a scenario does not happen and that medicine continues to be among the most privileged, satisfying, and rewarding of careers. ■

Steven A. Schroeder '64 is a distinguished professor of health and health care in the Department of Medicine at the University of California at San Francisco, where he also directs the Smoking Cessation Leadership Center. He can be reached at schroeder@medicine.ucsf.edu.

CURBSIDE CONSULTATION

Mother Nurture

FOR CENTURIES, HARVARD MEDICAL SCHOOL HAS HELPED its students give birth to ideas and cultivate careers. But until 1954, it never had a student giving birth to a baby. That year, when I was a third-year medical student, my first child was born, an event that would spark a personal mission: advocating breastfeeding for babies.

Since medical school, my research into the links between malnutrition and brain development has fueled my work to break the barriers to breastfeeding and to support the use of this natural resource by women throughout the world.

Liquid Assets

Pediatric and public health experts today recommend breast milk as the sole source of nutrition for at least the first six months of an infant's life. Although approximately two-thirds of American mothers try to follow this advice, fewer than one-third of them persist until their baby's six-month birthday. Five decades ago, only about 30 percent of American women even tried to breastfeed their newborns. Most soon gave up.

Just before my daughter was born, I took a pediatrics class whose instructor extolled the benefits of breast milk. I decided to give it a try. When informed of my decision, my HMS obstetrician scoffed: "Lactation? You won't have time."

I returned to school and hospital duties when my baby was six weeks old. My husband, Dick, had been drafted into the Army and was far away, so his parents pitched in and babysat. But my daughter had frequent bouts of colicky crying. She refused both pacifier and bottle. Only nursing would suffice.

My mother-in-law hit on the idea of driving my daughter to the medical school or to the hospital where I was assigned so I could nurse the baby. We took refuge in empty hallways, classrooms, and even restrooms. The most private and peaceful place, though, turned out to be the car. My mother-in-law would circle the block while I nursed.

Even so, nursing was difficult. I developed a painful, itchy rash, then proved to be allergic to the penicillin ointment my obstetrician prescribed. I took my third-year final exam—in pediatrics and obstetrics, as it happened—with a temperature of 104. After scribbling my answers as fast as I could, I clunked down the steep wooden steps of the amphitheater to turn in my blue book. My classmates cheered; they assumed I had aced the exam because of my recent practical experience. I pushed through the auditorium's swinging doors—and fainted.

As part of my discharge routine from the Boston Lying In Hospital, I had received two six-packs of free baby formula. Those bottles now tempted me. I gave in and added formula feedings. My milk supply—and my will to continue nurs-

ing—soon dried up. When my obstetrician said, "I told you so," I felt enraged, but, as a well-brought-up girl of the times, I said nothing.

Lactation went more smoothly when my second daughter and my son were born. I was back at work when the babies were three months old. Like their older sister, the younger babies spent evenings in colicky crying. I feared my inadequate milk supply was starving them. Once again, I prematurely began supplementing my breast milk with the formula given me as I left the hospital. I firmly believed that breast was best, but I hoped formula was good enough.

Accept No Substitutes

When our children were teenagers, I worked in Mexico and Central America studying brain development in malnourished children and on United Nations projects aimed at preventing malnutrition. I learned that chronic malnutrition in children stunts the growth of brain and body, saps creative energies, and limits a life's potential. I watched infants dwindle and die because the breast milk substitutes they drank were nutritionally inadequate or prepared with contaminated water.

Every year, according to the World Health Organization, more than a million infants die because they are not breastfed. Malnourished children succumb more readily to infectious diseases; at least half of the world's ten million under-five child deaths each year are attributable in part to malnutrition. Breastfeeding could help prevent these deaths.

Although today nearly three-quarters of the world's new mothers initiate lactation, only about 16 percent continue for a year. Obstacles to breastfeeding include inadequate antepartum education and cursory postpartum support from maternity professionals. Mothers who do try to nurse must figure out how to deal with the pressures of time and responsibilities, their fears of being unequal to the task, the lack of privacy, illness, and even public disdain toward their attempts. What was true for me 50 years ago remains true for many women: Medical professionals who attend mothers and their newborns often do not offer advice and encouragement. Instead women continue to receive free infant formula when checking out of maternity hospitals and clinics—and continue to be told it is a perfectly satisfactory and convenient substitute for breast milk.

Risky Business

In 1976, I joined the Infant Formula Action Coalition, or INFANT, an organization formed to combat corporate decep-



tion and aggressive marketing practices that discouraged mothers from initiating breastfeeding. A common practice at the time, for example, was for formula-company saleswomen to dress up as nurses, visit new mothers in hospitals and birthing clinics throughout the world, and laud the health benefits and convenience of formula feeding. New mothers who followed their advice and let their milk dry up soon faced the need to buy formula. Many poor women could not afford to purchase adequate supplies. They would stretch what they did have by diluting it, use cow's or goat's milk—also very expensive—or even substitute rice water or corn starch mixes. Many lacked access to clean water with which to prepare their baby's food and the refrigeration needed to keep the preparation sterile.

INFACt joined with other consumer, health, and religious organizations that were concerned about "bottle-baby" deaths to challenge Nestlé and other infant-formula manufacturers. When, as part of this effort, I testified at a 1978 U.S. Senate hearing on the inappropriate marketing of breast-milk substitutes to women in Mexico and the Caribbean, representatives from infant-formula companies contested my testimony, claiming they were performing a charitable public service by giving away formula.

World View

At a meeting in 1979, UNICEF and the World Health Organization drafted an International Code of Marketing for Breast Milk Substitutes, which called for a prohibition on advertising infant formula and its in-hospital promotion to new mothers. At the 1981 United Nations World Health Assembly, 118 nations voted in favor of the code. In 1984, Nestlé finally agreed to abide by the international code. Other infant-formula companies followed suit.

In the decades that followed those breakthroughs, however, frequent violations of both the letter and the spirit of the code have been documented in many countries. Throughout the 1990s, for example, dozens of violations were reported from countries such as India, the Philippines, Poland, Bangladesh, and South Africa.

But real progress has been made, too. Legislation embodying provisions of the code has been passed in about 75 countries. In 1991 UNICEF and the World Health Organization launched the Baby Friendly Hospital Initiative to underscore the importance of supporting lactation in maternity wards. And implementation of the code has been shown to increase the incidence of breastfeeding in hospitals from China to Peru to Zambia.

Sadly, the discovery that HIV and certain other viruses can be transmitted from mothers to infants through breast milk has altered the risk-benefit balance of the once unambiguous recommendation to breastfeed. Yet, even among mothers who may be infected with HIV, nursing may be best for their babies. In areas of endemic HIV and extreme poverty, some public health authorities recommend breast milk because its benefits are judged to outweigh the risk of the baby's acquiring the virus through the milk.

A 2005 review conducted by UNICEF and the World Health Organization in conjunction with advocacy and educational groups applauds progress in breastfeeding promotion and protection. Despite such findings, public health experts believe that the modest target for 2010—50 percent of infants breastfed for their first six months—will not be achieved.

My Harvard obstetrician was correct when he flatly told me I wouldn't have time to breastfeed. Five decades later, though, we should view obstacles to lactation as problems to solve rather than as immutable conditions of modern life. ■

Ann Barnet '55 is a professor emeritus of pediatrics and neurology at the George Washington University School of Medicine. In 1980 she founded the Family Place, a community center in Washington, DC, that promotes lactation.

Every Mother Is a Daughter

The Neverending Quest for Success, Inner Peace, and a Really Clean Kitchen, by Perri Klass '86 and Sheila Solomon Klass (Ballantine Books, 2006)

THE FIRST TIME I MET PERRI KLOSS '86 WAS MORE THAN 20 years ago, at a potluck dinner for first- and second-year women medical students. I brought carob brownies on a paper plate. (These were the days before nutrition was taught in medical school, and some of us were hazy on the proper feminist diet.) Perri brought something more substantial on a real dish that seemed to come from a real house—and also some dense knitting project. She wore an enormous caftan that drifted to the ground. I thought it was an indication of personality. Actually, it was an indication of pregnancy.

Perri had large confident hair and a large confident voice. In the years to come, she grew a large family and a confident pediatric career, wrote many large books, and finished many confident knitting projects. All of them have seemed to occur—from the distance of a stranger looking on—with incomprehensible ease and good humor. In her most recent book, *Every Mother Is a Daughter*, the main reason for this ease and good humor becomes clear. It has a great deal to do with her coauthor, Sheila Solomon Klass, who happens to be her mother and who would make the world a better place if she would only raise us all.

What a joyous and free mutual memoir this is—part Abbott griping to Costello and part Socrates musing to Plato, with the tiniest sounds of Cher throwing cracks to Sonny while she tosses her hair. Sheila grew up in Orthodox Brooklyn and married an anthropologist who took her adventuring far and wide; Perri, born in Trinidad, was raised in various parts of the world until the family came to rest in suburban New Jersey (about which she has dire opinions). Mother became a novelist and writing teacher; daughter became a doctor and writer. They hand scenes dexterously back and forth like an Indian raga. There is plenty of ribbing and one great overhanging sorrow to share, when the husband of one and father of the other dies. But there is none of the bone-

grinding conflict between generations that causes each to limp through the rest of life. It just isn't there.

Instead, there are two writers adoringly related, two mothers of three children each, two world travelers, two insatiable readers, two hungry eaters at the ultimate banquet. And of course there are the differences that make love charming: one is a slob ("[if] I started cleaning and straightening...who knows if I would ever do anything else? Let's just say that I have been unwilling to take the risk") while the other cannot tolerate entropy ("I ask Perri, timidly, if I might wash a few pots...She graciously assents"); one irreverent and the other respectful; one highly considered ("A mother owed her family a home-cooked dinner. That must be written somewhere in the Old Testament") and the other spontaneous ("there's my own sense of losing the race, as I hustle my unbreakfasted children out the door in the morning, advising them to grab a handful of nuts").

Maybe most important, one grew up with an impoverished mother who was "mistress of rhetorical guilt" and whose mantra was, "What's wrong with you? You think life is for pleasure?" The other had the blessing of her coauthor for a parent. Lucky younger generation!

Their absence of deep conflict liberates the authors from the usual tense family themes for some great writing. There are obvious memoir topics like food and travel, family holidays where

"cooking is an indoor sport," mandatory suburban dogs, and what it is like to be the daughter of a writer and the mother of a doctor. There are less obvious ones like labor and delivery around the world, gurus in India, bathrobes in Manhattan hotels, and underwear. In this particular flea market, there is even room for recipes and knitting patterns. The kitchen sink is missing, but maybe the revised edition will include it, if Perri allows her mother to wash the dishes first.

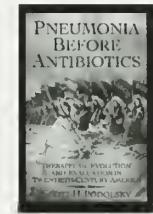
How often does one read a book so loving, as it quibbles its way through time and space, that it wishes nothing but the same joy between every mother and daughter? Bad advice on life and love is easy to find these days. Good wishes are harder and truer. Those in this book are certainly appreciated. ■



IT RUNS IN THE FAMILY: Perri Klass and her mother, Sheila Solomon Klass, both became writers and mothers of three.

PHOTO: MELISSA KENAK

Elissa Ely '88 is a psychiatrist at the Massachusetts Mental Health Center.



The Mind Has Mountains

Reflections on Society and Psychiatry, by Paul R. McHugh '56 (Johns Hopkins University Press, 2006)

In this compilation of essays, McHugh, a psychiatrist and member of the President's Council on Bioethics, examines contemporary medical issues absorbing Americans, from physician assisted suicide to stem cell cloning. He argues that Jack Kevorkian is certifiably insane, and he directs the debate of stem cells to the origins of their creation—in vitro fertilization or manufactured cloning.

Be a Survivor: Colorectal Cancer

Treatment Guide, by Vladimir Lange '72 (Lange Productions, 2006)

The second book in this series provides patients with detailed explanations of care options for colorectal cancer, including surgery, chemotherapy, radiation, alternative medicine, and participation in clinical trials. The book also addresses such practical concerns as assembling a health care team, undergoing tests, and understanding staging.

Forgotten Families

Ending the Growing Crisis Confronting Children and Working Parents in the Global Economy, by Jody Heymann '88 (Oxford University Press, 2006)

Heymann examines how employment and social conditions influence the abili-

ty of parents to care for their children. Topics range from how unpaid parental leave leads to malnourished or chronically ill children, to older siblings being pulled from school early to help with child care. These problems affect parents in all nations. The author calls for countries to create better policies for families to break the cycle of poverty.

Narrative Medicine

Honoring the Stories of Illness, by Rita Charon '78 (Oxford University Press, 2006)

By narrative medicine, the author means practicing medicine with an understanding for what patients endure, an ability to absorb, interpret, and be moved by the stories of illness. She stresses the importance of becoming a careful clinical listener, emphasizing that narrative medicine can ultimately lead to more human, ethical, and effective health care.

House Calls with John

by John Radebaugh '52 (Peter E. Randall Publisher, 2006)

In this memoir, Radebaugh, a pediatrician, describes the patients he encountered as he became increasingly involved in community medicine. From New England to Côte d'Ivoire, the house calls he made enhanced his understanding of his patients and their conditions. He also details his participation in Cesar Chavez's campaign to help improve care for migrant farm workers during the 1970s.

Williams-Beuren Syndrome

Research, Evaluation, and Treatment, edited by Colleen A. Morris, Howard M. Lenhoff, and Paul P. Wang '97 (Johns Hopkins University Press, 2006)

As a population, people with Williams-Beuren syndrome—a multi-system genetic condition that affects heart formation and facial features as well as neurological functioning—are more likely to have absolute pitch than even highly trained musicians. This book offers comprehensive coverage of the latest research about people with the condition. Each chapter is devoted to a particular characteristic of the syndrome—such as language abilities and spatial cognition—and concludes with practical and clinical implications.

Pneumonia Before Antibiotics

Therapeutic Evolution and Evaluation in Twentieth-Century America, by Scott H. Podolsky '97 (Johns Hopkins University Press, 2006)

In the United States, William Osler's "Captain of the Men of Death"—pneumonia—remains the infectious disease most likely to cause death. The author explores the history of treating pneumonia, from serotherapy to chemotherapy to antibiotics. He includes physician anecdotes and pharmaceutical advertisements—such as one from 1951 that proclaims, "Thank heavens it's only pneumonia!"—to demonstrate the evolution of thought and treatment.



Fists of Rage

IF ONLY STANLEY KOWALSKI'S doctor had known. Life might have been easier, and safer, for Stella and her sister.

But Stanley's disease occurred before it could be diagnosed. When Tennessee Williams introduced the New Orleanian to the world, the *Diagnostic and Statistical Manual of Mental Disorders* (DSM), the bible of psychiatric illnesses, was still five years from its debut. That first edition included a description of behavior Stella would have recognized, a rage disorder today known as intermittent explosive disorder (IED). Yet despite IED's being an evergreen entry in the diagnostic handbook, its incidence and prevalence remained undescribed.

That oversight has now been remedied. Researchers from HMS and the University of Chicago have defined IED's epidemiology. And what they tell us is stunning: IED affects as many as 16 million Americans in their lifetimes and is annually expressed in the behavior of approximately 4 percent of U.S. adults—or 8.6 million people—according to the study's senior author, Ronald Kessler, an HMS professor of health care policy.

The research team's findings appear in the June issue of the *Archives of General Psychiatry* and derive from data collected during the National Comorbidity Survey Replication, a two-year face-to-face survey of 9,282 people throughout the nation. The survey was carried out in conjunction with the World Health Organization World Mental Health Survey. The study results could help explain—and lead to better diagnosis and treatment of—the damaging behavior associated with road rage, domestic abuse, and other seemingly inexplicable outbursts that result in harm to people, property, or both.

Attacks of intermittent explosive disorder outsize the social stressors triggering them and are due to neither another mental disorder nor the effects of drugs or alcohol. Acting in a manner



STANLEY STEAMER: Like the outbursts that marred Stanley and Stella Kowalski's marriage in *A Streetcar Named Desire*, unexplained rage that is pregnant with violence disrupts the lives of nearly 9 million people in the United States annually.

well beyond simply "flying off the handle," people with the disorder exhibit periods of uncontrollable—yet, for them, cathartic—rage, which are followed by feelings of remorse.

Although they do not cause IED, depression, anxiety, and alcohol and drug abuse disorders are secondary diagnoses in approximately 82 percent of people with the illness. IED, however, usually shows itself well before such troubles manifest, a finding the scientists say may indicate IED is a risk factor for other mental disorders.

For their study, the team looked primarily at the manifestations of IED that they defined as broad and narrow. Their description of broad IED adhered closely to that found in the DSM, which requires three or more lifetime outbursts, one of

which occurred in the past 12 months, of one of three types of anger attacks: losing control and breaking something, losing control and threatening to hit or hurt someone, and losing control and hitting or trying to hurt someone. The narrow characterization also required a trio of occurrences of the same types of attacks, only these outbursts all had to happen within one 12-month period. To prevent their overestimation of IED prevalence, the team excluded respondents whose anger attacks occurred in the course of bipolar disorder.

The data analyses revealed that lifetime prevalences of broad and narrow IED were 7 and 5 percent, respectively. First attacks usually occurred around age 13 for males and age 19 for females. Seventy-one percent of the respondents

with broad IED had a history of interpersonal violence during their rages. These people may also suffer as many as 21 attacks each year, although the team's analyses found that an average of 44 lifetime outbursts is more likely. Overall, the researchers estimated repairs to property damaged by a sufferer throughout a lifetime of rage events at \$1,360. Injuries absorbed by people—damage that can never be tallied or amortized—could result in up to 180 visits to doctors, clinics, or hospitals during the course of an illness. And the

team found the illness shadows all faces of society; no significant sociodemographic correlates were discovered.

Attacks were more severe and significantly more persistent among individuals with narrowly defined IED, and severity and persistence were greatest among respondents who were violent and damaged property during their outbursts. More than 80 percent of participants with lifetime broad IED also suffered from other mood, anxiety, or substance abuse disorders. Most sufferers had been treated for emotional problems at some

time in their lives, but only a fraction had received help specifically for IED.

Although the investigators consider it unlikely that genetic factors account for IED's comorbidity with other mental health disorders, they see the early-onset finding as an especially important care-and-control beacon. If IED is diagnosed and treated when it is first expressed, the researchers postulate, secondary mental health disorders—sparked by harmful life changes such as divorce, financial difficulties, and other stress-inducing experiences—could be avoided. ■

HEART OF MINE

DOUGLAS COWAN HAS BUILT A TINY BAND-AID FOR A TINY HEART. Not your standard adhesive strip, mind you, but one crafted from cells that cause with beat-setting signals—and right now, one that works only for the hearts of laboratory rats.

Yet if the research of Cowan and his team of investigators at Children's Hospital Boston proceeds as expected, their baby bandages may soon repair the baby hearts of some of their human patients. Their valentine to broken hearts is reported in the July issue of the *American Journal of Pathology*.

Approximately 1 in every 22,000 infants suffers from a malady known as complete heart block, a life-threatening disturbance of the rhythm of the heart. In children with this condition, electrical signals cannot pass from the heart's atria to its ventricles, which leads to heart failure.

Usually a pacemaker, implanted in the chest or abdomen, treats the condition. But far an infant or a small child, pacemakers present several problems: they carry a greater risk of heart perforation and clot formation, and, because they have a lifetime of only three to five years and use leads that must be replaced frequently, their use requires the young patient to undergo repeat replace-and-repair operations. In a tiny baby, the risks are even greater: The pacemaker leads must run along the surface of the heart, causing even higher failure rates.

To avoid these problems, Cowan, a cell biologist in the Department of Anesthesiology, Perioperative, and Pain Medicine at Children's, and his team began to think outside the pacemaker. They engineered something completely different: an electrically conductive cellular strip that completely integrates into the heart's tissue.

Chasing to work with precursors to electrically-signal-conducting cells found in skeletal muscles, the team isolated myoblasts from rat skeletal muscles and cultured them. Within one day, the researchers were able to harvest cells and seed them on a flexible, three-dimensional scaffold made of collagen. The cells settled in well, distributing evenly and orienting properly to one another. And they began to beat when electrically stimulated.

The team implanted the structures, connecting the right atrium and ventricle in the hearts of the rats being studied, and conducted an electrophysiological test of the devices. The

implants did exactly what they were supposed to do: They integrated with surrounding heart tissue, electrically coupled with neighboring heart cells, and established a permanent electrical conduction pathway between the upper and lower chambers of the hearts of nearly one-third of the test animals. The beating bridges continued to work throughout the animals' lifespans, about three years.

Cowan's team now plans to test the treatment in lambs, a large-animal model that better approximates pediatric heart block. ■





Northern Exposure

MONEY CAN'T BUY HAPPINESS. Nor, it seems, can it buy health. Despite spending twice as much per person each year as our northern neighbors, U.S. residents have more health problems, greater difficulties getting care, and shorter life spans than Canadians, according to a study by HMS physicians at Cambridge Health Alliance.

This litany of less for more does not end there. The researchers found that compared with Canadians, people in the United States are one-fourth more likely to have unmet health care needs, one-third less likely to have a regular medical doctor, and more than twice as likely to forgo needed medications. And when U.S. responses tallied higher in the study, it translated to a lower quality of life: U.S. residents had higher rates of obesity, diabetes, hypertension, arthritis, and chronic obstructive pulmonary disease than did Canadians. The scientists did find one glowing point in the dark

findings, though: U.S. residents had lower rates of cigarette smoking than their Canadian counterparts.

The team of Cambridge Health Alliance researchers was led by Karen Lasser, an HMS assistant professor of medicine at Massachusetts General Hospital (MGH), and included David Himmelstein and Stephanie Woolhandler, each of whom is an HMS associate professor of medicine at MGH. The trio drew their conclusions after analyzing data from the Joint Canada-U.S. Survey of Health. This first-ever cross-national health survey contacted 3,505 Canadians and 5,183 U.S. residents between November 2002 and March 2003 in an effort to gauge health status, rates of illness, behavioral risk factors, use of health care, and access to health care in each country. The survey was a project of Statistics Canada—Canada's census bureau—and the U.S. National Center for Health Statistics.

The study, published in the July issue of the *American Journal of Public Health*, also

presented responses along lines that reflected foreign- versus native-born status, race, income level, and perceived satisfaction with service, which covered the queuing-for-care issue often raised when Canada's universal health coverage system and the United States' system of private insurance are compared.

The scientists found that financial barriers kept 7 percent of U.S. respondents from seeking care; such barriers impeded less than 1 percent of respondents in Canada from pursuing care. Unacceptable waiting times for care were cited by 3.5 percent of Canadians as their reason for having unmet care needs; among U.S. respondents, long waiting times deterred less than 1 percent from seeking care.

Immigrant status was associated with more pronounced health care differences in the United States than in Canada. In the United States, the largest populations of recent immigrants include Hispanics, followed by Asians; in Canada,



MAPLE LEAF BRAG:
Our northern neighbors in Canada—such as this walker in Vancouver—may have better luck getting their health care needs met than many U.S. residents.

PHOTO: RICHARD KAREN (2003) / GETTY IMAGES



EYES ONTO THE WORLD

most recent immigrants are Asian. Foreign-born U.S. residents reported worse access to care than did native-born residents, a difference not found in the responses from Canadians.

The researchers point out that results linked with racial disparities are complicated by differences in the composition of the respective populations of people of color. In the survey, race was self-reported in any of four categories: white, black, Hispanic, or other/multiple. People of color in the United States, but not in Canada, were more likely to have unmet health care needs, to forgo needed medicines, and to have a lower perceived quality of care than whites.

Data from Canadian respondents revealed differences in "culturally conditioned services"; rates for receiving Pap tests and psychiatric care were lower among people of color than among whites. People of color in both countries received inadequate help for depression. Nearly 8 percent of people of color in both countries were less likely to receive treatment for depression than were white U.S. residents or those with health insurance in the United States.

The team also compared responses to access to dental care; neither country has universal dental coverage. They found that in Canada income disparities were considerably more evident for dental care than medical care, approaching the dental care gap found in the United States.

The findings underline the scientists' contention that universal coverage attenuates disparities in health care but does not eliminate them. In stating that universal coverage must be implemented in the United States, the team also points out that such an effort would need adequate funding to avoid long waits for care as well as policies to address social conditions that are unfavorable to health. ■

STEREO SCOPING

Bring on the salmon but toss out the snakes. A study of elderly male twins by a team of researchers from the Massachusetts Eye and Ear Infirmary (MEEI) and the Channing Laboratory at HMS found that the risk for age-related macular degeneration was lower among those who ate more fish and foods with omega-3 fatty acids but higher—nearly twofold higher—among smokers. The team, led by Jahanna Seddon, director of the Epidemiology Unit at MEEI and an HMS associate professor of ophthalmology, studied 681 male twins from the National Academy of Sciences—National Research Council's World War II Veteran Twin Registry, 222 of whom were diagnosed with an intermediate or late stage of the disease. The researchers report their findings in the July issue of *Ophthalmology*.

CLEAR-EYED DECISION

Serendipity and savvy laboratory work have shed the first light on an old mystery: Why is the cornea free of blood vessels? Scientists at the Schepens Eye Research Institute and the Massachusetts Eye and Ear Infirmary have discovered that corneal clarity is linked to vascular endothelial growth factor receptor-3, a protein that neutralizes factors responsible for blood vessel growth. When their study of murine corneal tissue unexpectedly revealed large amounts of the protein existing naturally on the epithelia of healthy corneas, the researchers speculated it might be responsible for keeping the cornea blood vessel free. A series of experiments verified their theory. Their findings are reported in the July 25 issue of the *Proceedings of the National Academy of Sciences*.

OPTICAL COLLUSION

Studies of injured optic nerves in rats have shown that a natural growth factor called ancamadulin can stimulate regeneration of damaged nerve fibers in the central nervous system. In the June issue of *Nature Neuroscience*, a research team led by Larry Benowitz, an HMS associate professor of neurosurgery at Children's Hospital Boston, reports the action of the hitherto unrecognized protein. In retinal nerve cell cultures containing known growth-promoting factors, the addition of ancamadulin doubled growth of the spidery optic axons. In live rats, the protein increased nerve regeneration five- to sevenfold. The team also found that ancamadulin turns on various genes associated with axon growth.

FROM A DIFFERENT ANGLE

A 20-year study of 76,318 women in the Nurses' Health Study, reported in the July issue of *Ophthalmology*, finds that type 2 diabetes increases the risk for primary open-angle glaucoma (POAG), the most common form of glaucoma. Obesity or lifestyle behaviors are often seen as the factors that leverage the link between type 2 diabetes and glaucoma, but Louis Pasquale, codirector of the Glaucoma Service at the Massachusetts Eye and Ear Infirmary and an HMS assistant professor of ophthalmology, and his team statistically controlled for an array of factors, including body mass index, during their analysis. POAG affects more than 2 million people in the United States and is a leading cause of blindness.



CRITICAL CARE

Young doctors are challenged to heal the world's wounds by serving its most vulnerable people.

BY JEFFREY D. SACHS

Decades ago, when my girlfriend at the time—now my wife of 26 years—was in medical school, I accompanied her on rounds. I donned a white coat along with everyone else and followed the group from room to room. What I found shocked me. Those people were sick! In the fourth room we visited, the patient suddenly jumped up and asked, “What’s the matter with *that* doctor?” I had fainted dead away. ■ My girlfriend and I agreed she would be the one to pursue a medical degree and I would stick with a doctorate in economics. So why, you may wonder, is an economist addressing medical students, in the presence of the world’s greatest medical faculty, about applying clinical skills to global solutions? I have several justifications to offer. ■ The first is that I have actually taken many emergency calls in the middle of the night from patients in desperate situations.

I had thought I was a reasonably well read and fairly astute person.

SUFFERING AND DEATH IN THE AIDS PANDEMIC.

But of course you must understand that my response has always been, "Honey, it's for you!" I've watched my wife trekking out hundreds of times, listening intently, reasoning, and demonstrating the value of clinical skills in keeping children alive. She has restored hope and faith and happiness to families, proving that the skills doctors learn are the most marvelous life giving skills on this planet.

I went in a different direction and became an international finance specialist, which one day landed me 12,000 feet above sea level in La Paz, Bolivia, in the Andes. Although little works at that altitude, monetary theory does. That was the one thing I knew: It was possible to use good instincts and good theory to help solve practical problems.

I began advising ill countries—if not ill individuals—about their plight. But a dozen years ago, when I began working in Africa, my life changed fundamentally. Although I had worked in Latin America, Eastern Europe, and desperately poor parts of Asia, until I arrived in Africa I had not seen the nature of suffering on this planet with clear eyes.

When I began working in Zambia, the first thing I learned was that seven of our thirty counterparts in the Ministry of Finance had died of AIDS in the previous year. I had thought I was a reasonably well read and fairly astute person, but when I saw so much suffering and death in Zambia, I realized I had not yet fully understood the AIDS pandemic.

And it wasn't only AIDS. It was malaria, diarrheal disease, and a range of parasitic diseases. This disease burden was enveloping entire societies, and it began to fill my consciousness and understanding. I started asking myself several questions as an economist: What is the relationship between the massive disease burden and extreme poverty? What were we doing about the crisis? And what could we do about it?

I learned several lessons. First, when I began examining the implications of

malaria on economic development, I realized that only one article in the past 40 years had focused on the relationship between malaria and economic development, even though each year the disease kills more than a million people—approximately 90 percent of whom are in Africa and most of whom are children under five.

That one article, although pioneering, wasn't very good. It stated, for example, that malaria led to rising per capita incomes as it caused capita to fall. It had a little more theory behind it, but it wasn't a sophisticated view of the pervasive historic link between a high malaria burden and extreme poverty. And it set me on a course of thinking about the relationship between disease and poverty.

It turns out that disease and poverty are highly correlated not only for the obvious reason that the poor typically do not gain access to essential health services, but also because ill health is one of the highest barriers societies face when seeking to overcome poverty. Malaria, perhaps most of all the diseases, affects more than individuals; it also stops production, migration, and internal investment. Malaria has played a decisive role in Africa's long-standing poverty trap.

As the statistical demonstrations of that fact became clearer and clearer to me, I turned my attention to what could be done about malaria and the AIDS pandemic. And I learned something I would never have dreamt. Despite all the handwringing and speeches and pronouncements and articles, as recently as the late 1990s the rich world was doing essentially nothing to help the poor.

It took almost an archeological expedition to dig through the rhetoric down to the reality. As late as 1999, for example, the entire Western assistance budget to fight AIDS in Africa—at a time when 25 million people were already infected with HIV—was \$80 million a year, from all the world's rich nations to all of Africa.

We were doing almost nothing about AIDS in Africa. We were doing almost



PHOTO: JONATHAN EHAVEN/HARVARD MEDICAL ALUMNI BULLETIN

but when I saw so much
IN ZAMBIA, I realized I had not yet fully understood



REACHING OUT: Olayinka Jegede-Ekpe became one of the first Nigerians to go public with her HIV infection. She now works with women living with HIV/AIDS across Africa.

We have in our hands the financial, scientific, and technological capacity to

WE HAVE THE RESPONSIBILITY TO END

nothing about the malaria burden, which was resurging because of increases in resistance to chloroquine, sulfadoxine-pyrimethamine, and other first-line medicines. We were talking occasionally, handwringing once in a while, but in fact doing almost nothing.

Six years ago I was honored to be asked by Gro Harlem Brundtland, then head of the World Health Organization, to bring together the financial world and the public health world by creating and chairing the Commission on Macroeconomics and Health. Our research and analysis uncovered a number of alarming trends.

First, the disease burden is crippling much of the poor world, and in no place more so than in sub-Saharan Africa.

Second, life expectancy in some countries of that region is only 40 years, compared to nearly 80 in our part of the world. That dramatic difference is caused by a small number of diseases and conditions—AIDS, malaria, tuberculosis, diarrheal diseases, acute lower respiratory infections, both micro- and macro-nutrient deficiencies, vaccine-preventable diseases, eukaryotic parasites, the helminths, schistosomiasis, and mothers dying during unsafe childbirths.

Third, in addition to causing more than 80 percent of the poor world's excess disease burden, these conditions cause massive suffering and trap people in poverty. Yet each has protocols for prevention and treatment, including powerful technologies and known methods of attack.

Finally, we calculated the cost of enabling interventions to reach the poorest of the poor to be well under two-tenths of 1 percent of the rich world's income.

I worked closely with two good friends at Harvard Medical School, Paul Farmer '90 and Jim Kim '86. We went hiking in the central plateau of Haiti to see their clinic. I saw what good medicine could mean in the treatment of AIDS, when no one else was doing it. From that experience, I was able in a small way to join with many others to help make a difference.

One dramatic collaboration occurred in the spring of 2001, when nearly 150 Harvard faculty members actually agreed on something. We developed a consensus statement that asserts that clinical methods to provide antiretroviral therapy in low-income settings do exist and that such measures must be carried out in light of humanitarian, economic, and global security perspectives. The Harvard faculty statement made a huge difference; I remember taking it to United Nations Secretary-General Kofi Annan and using it to help launch the Global Fund to Fight AIDS, Tuberculosis and Malaria.

It's proof of what clinical medicine can accomplish. The reality is that we know what to do. It's arguably affordable, but to this moment we are *choosing*—there is no other word for it—to let 10 million people die each year because they are too poor to stay alive. Too poor to access the one-dollar dose per day for antiretrovirals to treat AIDS or the one-dollar dose that can clear a malaria infection.

I recently visited an impoverished village in Tanzania, where I asked a mother to explain what people there did when their children get sick. With great dignity, she responded, "What we do, Professor Sachs, is we watch our children die. I have lost three to malaria." This is a disease that is completely treatable if the medicine is delivered in time.

My final point about applying clinical skills to global solutions is that not only do the clinical and technical skills exist, but the broader concept of how best to apply those skills exists as well. Physicians are trained to use those skills to brilliant effect, to apply a deep understanding of science to a specific instance. It's that translation and application to a specific circumstance that is vital—and that is the key to alleviating extreme poverty as well.

I've coined a term, "clinical economics," to indicate an approach to the problems of economic development that is inspired by the diagnostic rigor and practical solutions of good clinical medicine. In medi-



HE AIN'T HEAVY: The dispensary in which this young Burmese girl waits with her four-month-old brother is a half-day walk from their mountain village. With the baby ailing and their mother sick with tuberculosis, the young girl shoulders the responsibility for her brother's care and feeding.

cine you teach by doing, by apprenticeship. You teach by having brilliant teachers impart skills to the next generation so you can carry on these magnificent traditions. And you teach with real patience, to allow an understanding of the specific skills that are vital for success.

What I can tell you as an economist and a development practitioner is that we can apply this clinical reasoning not only to medical challenges but to public health challenges as well: the challenges of

TRANSFORM THE WORLD. AND

the scourges of extreme poverty, hunger, and disease within our generation.



PHOTO: JEFFREY D. SACHS

growing more food, or finding how the local hydrology can deliver safe drinking water, or using the Internet to end the isolation of villages, or solving other practical challenges that the poorest of the poor face. These challenges can be met if you use your clinical skills with the rigor, commitment, ethics, and decency with which you have been taught to use them.

We have in our hands the financial, scientific, and technological capacity to transform the world. And we have the

responsibility to end the scourges of extreme poverty, hunger, and disease within our generation.

As you embark on your residency, keep in mind that other residency—your residency on this planet. You have skills that are unique and training that is second to none in the world. You can use your skills to save lives literally by the thousands. And when you train, encourage, and inspire others, you can save lives by the millions.

In the coming years use your clinical residency—and your residency on this planet—to do what's right. Let's work together to make this a world in which we can live in peace, prosperity, and happiness on a crowded planet—and leave a safe world for our children. ■

Jeffrey D. Sachs, PhD, is director of the Earth Institute at Columbia University. This text was transcribed and edited from a speech he delivered to the HMS Class of 2006.

THE YELLOW BRICK

The journey through medical school is marked by compassion, new skills, and friends for life.

NADER NASSIF

When we started medical school, we all felt like Dorothy waking up to find herself in the wonderful world of Oz. Instead of a bunch of annoying Munchkins gawking at us, though, we sat in a big lecture hall with countless portraits of old white men staring at us. In fact, some are sitting behind me right now; they're probably staring at me and thinking, "I can't believe he called me old!" On our first day of medical school, Daniel Lowenstein '83, then mayor of Munchkinland—I mean, then dean of medical education—assured us that Harvard hadn't made a mistake when accepting us, that we were actually worthy enough to be here, and that during the next four years we would travel on a wondrous journey, our path to becoming doctors.

During those four years we were indoctrinated into the life of the physician. We studied, reviewed, partied, and napped in class—a lot—all for the low, low price of \$123 a day. But we also learned the art of medicine. We offered

compassion and experienced empathy. We thought critically and strived to tackle the problems we faced in the classroom, in the clinical setting, and in the laboratory. We grew to realize we were well on our way to finding our

hearts and our brains. During our clinical years, we practiced the skills it takes to become a physician, but most of all we came to understand what it meant to have someone trust us implicitly. At first we drew strength from our short white coats, which hid our insecurities. We soon realized that each of us had the compassion, heart, and skills we were striving for: What we lacked was the belief that we could make a difference in another person's life.

More important than our search for our hearts and our brains, our journey through medical school would not have been the same without those who gave us courage and support. Our journey wasn't a solitary one. We owe thanks to our parents who have nurtured us for decades, fostered our curiosity and ambition, and helped us through the tough times. We owe much to our significant others, who have supported us through our worst post-call mood swings and have had the patience to be our companions through this four-year journey. Finally, we are eternally indebted to the friends we made at HMS.

ROAD



These lifelong friends have made these past few years some of the more memorable of our lives. We traveled together down the Yellow Brick Road ever so slowly from that innocent first year when we didn't know which end of the stethoscope to stick in our ears, to today, when the future orthopedic surgeons among us still don't know how to use a stethoscope.

All these people played a role in creating the physicians we are today. These wizards behind the curtain deserve our gratitude, respect, and recognition.

So Dean Lowenstein was right! From the time we entered HMS, we have grown. We have also gotten married, started families, and sadly lost more hair. We have remained essentially the same people we were before with minor exceptions—we are a few pounds heavier and much, much poorer. But we now realize that, all along, we have had what we needed most: a heart, a brain, and courage. ■

Nader Nassif '06 is undertaking a residency in orthopedic surgery at the Barnes-Jewish Hospital in St. Louis, Missouri.

INSIDE THE WHITE

The mantle that doctors don should not hide their differences but rather give them expression.

BY CARLOS SAAVEDRA

When we start medical school, we are handed a white coat. We accept this symbol of our new identity as doctors with excitement yet wear it self-consciously. We know nothing about medicine and can't help but feel like impostors. Still, we cling to the hope that somehow, through ways that defy our understanding, by the end of medical school we will be doctors. We push our doubts aside and commit ourselves to the impossible—filling the ample space of that white coat. ■ Classes start, and we wonder if we'll make it. We get through anatomy and begin to think survival may be possible. Biochemistry follows, and things don't seem that bad. Then physiology, and we grow excited; we're getting closer to being worthy of wearing that white coat. Pharmacology comes along

and then it hits us: How can winter be so long? But time passes and before we know it, we're in a hospital wearing that white coat.

Then the white coat grows bigger and we get smaller because we should have read before morning rounds and we should have stayed up all night with

the doctor on call. We should have presented the patient's history more quickly because the attending's time is precious and we should have been more thorough since details are critical for optimal patient care. We should have been more assertive because the busy resident needed the extra help and we should have been more cautious not to trespass boundaries. We should have done exactly the opposite of what we did because somehow we kept getting it wrong, and our best was just not good enough.

In a world full of contradictions, we cannot please everyone and do everything. But we try to because we want to be worthy of that white coat—and when we feel we've failed, we blame ourselves. We start doubting that we have what it takes to be a great doctor. We try desperately to overcome the flaws that prevent us from fitting into that white coat, even if those flaws were traits we once loved about ourselves.

COAT



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We learn new rules: Don't go out and play in the snow because you should be reading for neurology tomorrow. Don't grow your hair because it looks shabby and unprofessional. Don't take the trip to Nepal because you could use the extra month to do research. Don't make a joke or laugh during rounds because you must maintain your decorum: You Are a Doctor.

And so we finally become that white coat. But when you peek inside, you cannot find even the ghost of us.

I am not advocating a subordination of our medical duties to our personal agendas. We have been entrusted with the great privilege of taking care of patients' lives, and we shouldn't forget that. But no

one can really fit into that white coat. I'm certain that no one sets foot in the hospital in the morning thinking, "Today I'm going to do less than my best. Today I will be mediocre." We all have different emotional, social, cultural, and intellectual strengths and weaknesses. Everyone's best is different. We all struggle in certain arenas and excel in others. We are a diverse group of people, and we all bring different qualities to medicine. One size doesn't fit all, so let's not live like it does.

Let's be grateful for our unique talents because we can use them to benefit our patients, and let's appreciate our imperfections because they give us depth to empathize with our patients,

who, like us, try to do the best with what life has handed them.

Still, it's not easy to embrace our uniqueness—even after acknowledging its value—because it can sometimes cost us the occasional pat on the back or smile of approval. When we let go, though, we finally grow into our white coats as unique and empathetic healers with lives and careers that resonate with our individual passions and talents. We must let our individuality shine through so our patients—and the rest of the world—can appreciate the person inside the white coat. ■

Carlos Saavedra '06 is a psychiatry resident at the New York University School of Medicine.

HMS PRIZE



class oath

Dean

For more than two thousand years, physicians have taken an oath that has served as a contract with their community, a tribute to their mentors, and a reminder to themselves of a deep commitment to their profession. Today, Class of 2006, you stand before family, friends, teachers, and colleagues, poised to join a rich tradition of discovery and healing. In this spirit, always mindful that your successes are based on the work of those who came before you, and that your work will inform the practices of those who come after you, you are invited as a class to articulate the ideals and principles that will guide you in the years ahead.

The following medical degree recipients graduated with honors or special awards:

Monique Latoya Anderson
James Tolbert Shipley Prize for The Community Service Award to the senior who has done the most to exemplify and/or promote the spirit and practice of community service; the Leonard Taw Humanism in Medicine Award presented by The Arnold P. Gold Foundation to a graduating medical student who consistently demonstrates compassion and empathy in the delivery of care to patients

Bobak Robert Azamian, cum laude
Microtools for In Vitro Models of Vascular Pathology

Vassilios James Bezzerezides
Leon Reznick Memorial Prize for excellence and accomplishment in research: *Rapid Vesicular Translocation and Insertion of TRP Channels*

Medell Kristen Briggs
Society for Academic Emergency Medicine Excellence in Emergency Medicine

Class

First, I will do no harm.

I will see each patient as a fellow human being.

I will partner with each patient in decision-making.

I will aim to cure whenever possible and to heal always.

I will honor and protect the confidences entrusted in me.

I will be flexible in my practice, mindful that medicine is an art and an ever-changing science.

I will value the roles of belief, spirituality, and culture in the lives of my patients.

I will respect my patients' autonomy and dignity, both in living and in dying.

I promise my colleagues:

- to uphold the integrity of our profession;
- to be open-minded and respectful in our collaborations;
- to embrace investigation and education in order to expand medical knowledge; and
- to honor the teachings of my students, my patients, my colleagues, and my mentors.

I promise to remember the ideals for which I chose this honorable profession.

I will be honest with myself, my colleagues, and my patients about my mistakes.

I commit to being a lifelong scholar and to continue to refine the skills I have acquired.

I promise to value my own well-being in order to fulfill the responsibilities that I accept today.

I vow to my community:

- to serve as physician, educator, and advocate;
- to promote public health and prevent disease;
- to ensure quality health care that is accessible to all; and
- to maintain a global perspective as I ally with patients one at a time.

I make these promises solemnly, freely, and upon my honor.

ES & AWARDS

Award to a senior medical student who has demonstrated excellence in the specialty of emergency medicine

Robert Benjamin Den, cum laude
Microbe Detection by a Novel Concatenated Library Approach

David Michael Dudzinski, magna cum laude
Nitric Oxide and the Control of Firefly Flashing; Richard C. Cobot Prize for the best paper on medical education or medical history: *Reflections on Historical, Scientific, and Legal Issues Relevant to Designing Approval Pathways for Generic Versions of Recombinant Protein-Based Therapeutics and Monoclonal Antibodies*

Ryan David Egeland, cum laude
In Situ Oligonucleotide Synthesis on Poly(dimethylsiloxane): A Flexible Substrate for Microarray Fabrication

Taryn Grizzard Fairlie, cum laude
Policies and Practices Related to Breastfeeding in Massachusetts: Hospital Implementation of the Ten Steps to Successful Breastfeeding

Angelina Marguerite Faster
Rose Seegal Prize for the best paper on the relation of the medical profession to the community: *Young Women's Sexuality in Tunisia: The Health Consequences of Misinformation Among University Students*

Daniel Guss, cum laude
Hinged Elbow Fixation for Severe Elbow Contracture

Jayne Elizabeth Hairstan, Dzifa Sena Kpadza, Gia Marie Landry, Chealan Dain Miller, and Luwan G. Semere
The Multiculturalism Award to the senior in each Academic Society who has done the most to exemplify and/or promote the spirit and practice of multiculturalism and diversity

Alyria Yang Han
Betsy Jelin '91 Prize to that senior who most demonstrates overall academic excellence with a career interest in pediatrics, oncology, international health, or psychiatry

Saria Mahamed Hassan, cum laude
Rose Seegal Prize for the best paper on the relation of the medical profession to the community: *Chapter 1: Identification of Hepatocyte Molecules Interacting with Plasmodium Thrombospondin-Related Adhesive Protein (TRAP) and Chapter 2: Genetic Diversity in the Gene Encoding*

the Thrombospondin-Related Adhesive Protein (TRAP) of Plasmodium falciparum in Senegal

Neil Ashak Hattangadi, magna cum laude PASTEUR Award presented to a graduating medical student whose work best exemplifies clinical investigation that has resulted in a published paper or one accepted for publication: *Analytical Methods for Whole-Genome Disease Association Studies by Admixture Mapping*

Michael E. Hatchman, cum laude
Coverage Rates with the Pneumococcal Conjugate Vaccine (PCV) on the Navajo and Apache Reservations: What It Means to Be "Immunized"

David Yi-Gin Hwang
Dr. Sirgy Songer Award for excellence and accomplishment in research, clinical investigation, or scholarship in psychiatry: *The Brain Basis for Episodic Memory: Insights from Functional MRI, Transcranial EEG, and Patients with Epilepsy*

Vivek Iyer, cum laude
Modeling the Effects of Parvalbumin in Diastolic Dysfunction

Kerunne Segametsi Ketlagetswe
Robert H. Ebert Primary Care Achievement Award for excellence and outstanding accomplishments in the field of primary care medicine

William Henry Kitchens, Jr., cum laude
Macrophage Depletion Suppresses Cardiac Allograft Vasculopathy in Mice

Jahannes Ruediger Ulrich Kratz, magna cum laude
Hemodynamic Forces Regulate Cell-Fate Decisions via Notch Signaling

Brandan Wardster Lee
The Gerold S. Foster Award in recognition of contributions to the student body by virtue of serving on a student-faculty committee including, but not limited to, the Committee on Admissions

Ning Lin, cum laude
Cytotoxic T Lymphocytes Engineered to Target EGFRvIII Receptors in Glioblastoma

Nader Amir Nassif, cum laude
Spectral Domain Optical Coherence Tomography and Innovation in Biomedical Imaging of Cartilage

Michael Edward Pacaud, magna cum laude
Henry Asbury Christian Award for notable

scholarship in studies or research: *High Throughput Screening for Peptide:N-glycosidase Inhibitors*

Rachel Marie Peragalla
The Community Service Award to the senior who has done the most to exemplify and/or promote the spirit and practice of community service

Elizabeth Grace Pinsky
The New England Pediatric Society Prize to the senior who, in the opinion of peers and faculty, best exemplifies those qualities one looks for in a pediatrician

Pardis Christine Sabeti, summa cum laude
Identifying Natural Selection in the Human Genome

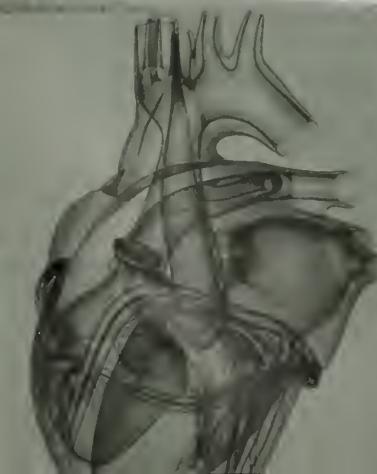
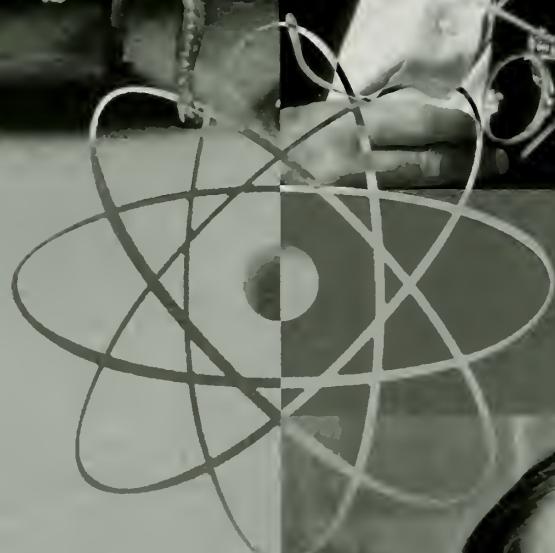
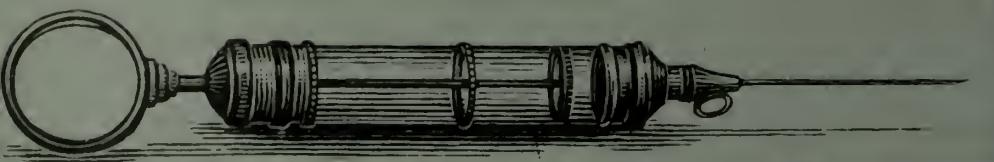
Lewis Liu Shi, cum laude
Semi-Constrained Primary and Revision Total Elbow Arthroplasty: A Study of 60 Conrad-Morrey Total Elbow Replacements

Jane Unaeze, cum laude
The Impact of Psoriasis on Health-Related Quality of Life Decreases Over Time: An 11-Year Prospective Study

Victoria Elizabeth Hsiao-Hung Wang
James Tolbert Shipley Prize for excellence and accomplishment in research: *B Cell Development and Immunoglobulin Transcription in Oct-1-Deficient Mice*

Michael Jan Westerhaus
Robert H. Ebert Primary Care Achievement Award for excellence and outstanding accomplishments in the field of primary care medicine





HONOR BOUND: Clockwise from top left: David Hubel, Joseph Murray, Bernard Lown, and Thomas Weller (left) with fellow Nobelist John Enders

MEN OF HONOR

In the history of the Nobel Prize, which spans more than a century, fewer than 800 individuals and 20 organizations have received the award. Four members of this select group reflected on the experiences that shaped their lives at the most recent HMS Alumni Day Symposium. Nobel laureates David Hubel, Bernard Lown, Joseph Murray '43B, and Thomas Weller '40 looked back on the valuable collaborations and serendipitous moments that allowed them to win the Nobel.

"The news came as a thunderclap," said Hubel of cutting short his shower on a cold October morning to take a phone call telling him that he and collaborator Torsten Wiesel had been awarded the 1981 prize in physiology or medicine for their neuroscience research in visual systems. "One has to realize," Hubel said, "what a significant role luck plays in the outcome of research."

A journalist collapsing in cardiac arrest at a press conference proved lucky for Lown—though initially unlucky for the journalist, who survived after Lown and other physicians performed cardiopulmonary resuscitation. The conference had grown antagonistic, and Lown quick-

ly drew a comparison between the immediate response this single cardiac patient received and the urgency of the global threat of nuclear war. The press turned more favorable, and Lown won an audience with Mikhail Gorbachev to press his cause. Lown had earlier accepted the Nobel Peace Prize in 1985 on behalf of International Physicians for the Prevention of Nuclear War.

Weller experienced serendipity closer to home. His younger son fell ill with what appeared to be a severe form of German measles at a time when the causative virus had stymied virologists' attempts to isolate it. Weller, winner of a 1954 Nobel for earlier work in isolating and growing cultures of the poliovirus, then isolated the rubella virus from his son.

Murray, co-winner of the 1990 Nobel in physiology or medicine with E. Donnall Thomas '46 for discoveries in organ transplantation, echoed his fellow Nobelists when he declared, "No one person is responsible for medical progress. We are all part of a team." ■

SUDDEN DEATH

A physician recognizes the hazards that persist in a post-nuclear age—and vows to allow no harm.

BY BERNARD LOWN

I have been puzzling about how best to capture a long life charged with tumultuous memories. Should I describe being temporarily tossed out of medical school in 1943 for desegregating blood in the Johns Hopkins Hospital blood bank? Or, some 45 years later, launching low-Earth-orbit satellites to afford connectivity to hitherto voiceless health workers in sub-Saharan Africa? Or dealing with dramatic events around the introduction of DC defibrillation, cardioversion, or lidocaine? Or focusing a spotlight on the formidable problem of sudden cardiac death? Or bringing napalm-burned Vietnamese children for restorative care to U.S. hospitals? Or nearly succeeding with colleagues in introducing a single-payer health care system in Massachusetts?

Instead I have decided to agitate with an issue that deserves physician involvement as much now as it did when I first became burdened with it 45 years ago. At that time I realized that sudden nuclear death posed a far greater threat to

humankind than sudden cardiac death; indeed, the major threat to human survival was nuclear, not cardiac. That realization evoked emotions ranging from dread and revulsion to despair and helpless rage. But physicians are the ultimate

pragmatists. Rather than retreating into morose introspection, we define a course of action and move ahead. What, then, could we do? Clearly we needed to rouse people to the impending catastrophe. But much of the information was classified, the public was largely uninformed, and the mass media provided no recourse.

In 1961 I assembled a small cadre of doctors. Calling ourselves Physicians for Social Responsibility, we met biweekly at my home outside of Boston. We knew next to nothing about atomic weapons or radiation biology and even questioned the legitimacy of doctors becoming embroiled in a controversial political arena far removed from our realm of medical knowledge. Most of us were academics, and our strengths were to research, to analyze, to write, and to publish. We agreed to investigate the medical consequences of a multi megaton nuclear attack on Boston. We addressed the unthinkable.

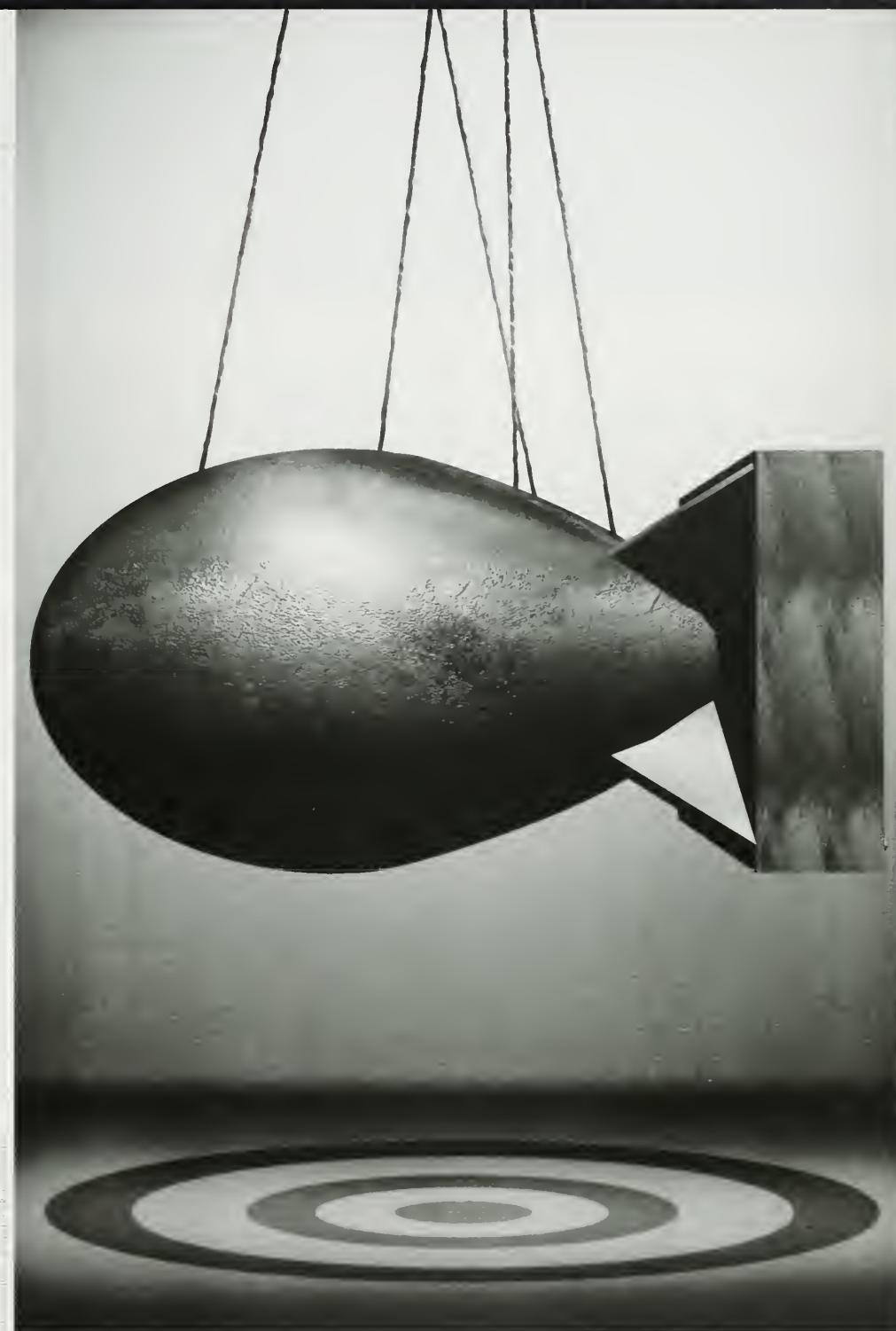
I look back at that remarkable group of young doctors and marvel at their

penetrating intelligence, prodigious energies, unstinting investment of time, and skill in unearthing deeply concealed but highly relevant information. We concluded that modern medicine had nothing to offer, not even a token in the ease of nuclear war. We described a world wherein the living would truly envy the dead. The advent of the nuclear age posed an unprecedented question: not whether war would exact yet more lives but whether human beings even had a future on this planet. The *New England Journal of Medicine* devoted an entire issue to our findings.

Media coverage was extensive worldwide. We introduced into the nuclear debate gruesome realities that had been avoided in public discourse, helping to mobilize public opinion against atmospheric nuclear testing. We stimulated anti-nuclear movements around the world, thereby seeding the global terrain for the international organization that was to emerge two decades later. We proved that doctors had something significant to contribute to the nuclear debate then raging.

Although our analysis had a substantial public impact, not a single nuclear weapon system was dismantled as a result. What followed was the greatest arms buildup in history, with a stockpiling of nuclear destructiveness equivalent to a million Hiroshimas. Thinking ceases at the scale of such colossal perversity; our minds decouple.

In the late 1970s, I concluded that to mobilize a wide public against the looming nuclear danger required a more balanced view of the Soviet people as part of the human family. The medical profession was well equipped for this challenge. Doctors from the two contending camps could foster trust by working together against nuclearism. After all, few professions are as international in character, share as many age-old traditions, and are guided by such similar methods, termi-



nologies, and objectives. We draw from a single scientific database and a common pool of knowledge.

Doctors are trained to devise practical solutions to seemingly insolvable problems. In fact, at the height of the Cold War, Soviet and American doctors worked shoulder to shoulder in the World Health Organization's effective smallpox eradication campaign. Our ancient traditions and enduring global

associations enabled doctors to engage in effective citizen diplomacy.

For more than a decade, through the National Institutes of Health, I had collaborated with Soviet cardiologists on the sudden cardiac death problem. I befriended Eugene Chazov, one of the Soviet Union's leading heart specialists. As physician to Leonid Brezhnev, the general secretary of the Communist Party, and other Politburo members,

Physicians from all over the GLOBE HELPED unwind the potential doomsday clock. We roused multitudes to speak out AGAINST THE AWESOME PERIL.

Chazov had ready access to the highest echelons of Soviet power.

Led by American and Soviet doctors, the International Physicians for the Prevention of Nuclear War, or IPPNW, emerged in 1980 bursting with vitality. We achieved almost instant global visibility. Our annual world congresses attracted global leaders and an ever-growing number of adherents. More than 200,000 physician members joined from dozens of national affiliates.

IPPNW focused attention on the unprecedented nature of the nuclear threat; on the arms race diverting scarce resources from vital social needs; on the inevitability of accidental launches of nuclear missiles, whether resulting from human foible or technological error; and on the environmental catastrophe of nuclear winter. We delved into nuclear policy issues as well. Despite many thousands of negotiation sessions between arms controllers from the opposing power blocks, still not a single weapons system had been dismantled. We urged a new approach, beginning with unilateral deeds instead of debating the minutiae of nuclear disarmament. We believed the weight of aroused public opinion would compel the other side to reciprocate. As a first measure we urged a cessation of nuclear testing.

Through our extraordinary connections with the very top of the Soviet ruling elite, our voice was heard. Once Mikhail Gorbachev was in power, our proposed approach was adopted. The unilateral acts of the Soviet government, including a long-lasting cessation of nuclear testing, proved powerful confidence-building measures that contributed to ending the Cold War.

Today the world no longer faces instant nuclear extinction, a momentous achievement in which physicians played a substantial role. At a time when missile-propelled technology outdistanced snail-paced diplomacy, IPPNW physicians from all over the globe helped

unwind the potential doomsday clock. We roused multitudes to speak out against the awesome peril. A mere five years after IPPNW's founding we were awarded the ultimate world recognition, the Nobel Peace Prize.

One incident from those charged times deserves sharing. I was chairing the press conference just after the Nobel ceremonies. Many journalists were hostile; they reviled Chazov. The mood was tense, and the confrontation grew strident. A Soviet journalist sitting in the front row stood up to pose a question but then suddenly collapsed in full cardiac arrest. As we were closest to the victim, Chazov and I began cardiopulmonary resuscitation. The large cadre of doctors present helped provide mouth-to-mouth ventilation and chest compression. Photojournalists were shoving doctors out of the way to get a better image of the victim.

When the stricken journalist was removed, I ended the press conference, calling attention to the sudden cardiac arrest just witnessed as a parable of what our movement was all about. When facing a medical catastrophe, I pointed out, doctors of diverse backgrounds, differing cultures, and opposing political persuasions cooperate in saving a human life. Doctors don't care whether a victim is saint or sinner; they respond without hesitation to a human being in distress. The world, I said, is now similarly threatened with sudden death. We physicians are responding, compelled by values evolved over several millennia. IPPNW is nothing more than medical professionalism with a global human face.

This episode had three positive outcomes. The Soviet correspondent, after a stormy hospital course, survived the cardiac arrest and returned to work. Overnight the world press turned favorable to our cause; a single patient had made a greater impact than a tome of learned disputations. And, as a special perk, Gorbachev invited Chazov and me for a visit.

We met in the Kremlin a few days later. Gorbachev's staff warned us that the interview would have to be limited to 15 minutes since he was scheduled to address Socialist bloc leaders assembled in Moscow. We had barely sat down when he acknowledged that our resuscitating the journalist was the most dramatic event he had ever seen on television. He added that his ordering a cessation to underground nuclear testing was in no small measure because of the persuasive agitation of doctors. Our discussion extended for several hours. Still mindful of the 15-minute restriction, I kept peeking at my wristwatch. After a while Gorbachev said, "I see you nervously glancing at your watch, Lown. Do you have another appointment?"

I am persuaded that the world is blessed to have had a singular statesman such as Gorbachev at the helm of a superpower, and I am proud that we physicians contributed to the constructive steps he took to defuse the nuclear threat.

So what have I learned? I have learned that we need to resist the ineluctable seduction of material rewards that waylay dreams and warp social responsibility. Doctors are challenged to confront a web of problems that are essentially moral and derive from the deepest ethical precepts of our profession. I have learned that the leading cause of ill health everywhere is poverty. I have learned that there can be no healthy United States in a sick world, no secure United States in a war-torn world, no affluent United States in a poor world. I am persuaded that we shall not have a livable world unless we make it a more just world. We can succeed if we listen to the promptings of conscience and let our imaginations roam suffused with hope. ■

Bernard Lown, MD, professor of cardiology, emeritus at the Harvard School of Public Health, accepted the Nobel Peace Prize on behalf of the International Physicians for the Prevention of Nuclear War in 1985.

DOUBLE VISION

A decades-long collaboration gave two researchers insight into how the brain handles messages from the eyes.

BY DAVID HUBEL

One early morning in October 1981, my wife answered the phone and called me out of the shower. As I stood there, with my teeth chattering, a bombastic voice shouted, "Congratulations!" Irritably, I asked, "What for?" The voice explained: Torsten Wiesel and I had just won the Nobel Prize for our work on the visual system. ■ The impression I'd formed was that each year the prize was awarded to someone who'd had the champagne on ice for some time—perhaps several years. That wasn't the case with us. We didn't even know the prizes were being announced; the news came as a thunderclap. Many people were qualified and had been in the queue for winning the prize much longer. ■ Looking back, though, I think the reason we won the prize can be summarized along the

following lines: The brain consists of a large number of structures, and the problem any neurophysiologist confronts is learning the function of those structures. This implies at first some

sort of teleology, but the lesson of evolution is that teleology is real and must be taken seriously.

Torsten and I wanted to understand what the cortex did. We knew informa-

tion travels to any area of the cortex over millions of fibers. Somehow the information from those fibers is rearranged or sorted—and the output differs from the input. Our main concern was to find out from the primary visual cortex and the lateral geniculate body what the difference was between the input and the output.

In those days—and still today—the most powerful tools for this kind of research were recordings from single cells. So we started out recording from single cells in these two structures, to try to discover their functions. Torsten and I began collaborating in 1958, at which time single-cell recording from the brain had just begun.

At the time, no one had a good idea of the difference between input and output for any of the brain's structures. Vernon Mountcastle had done much important work, but it wasn't clear, for example, how the firing of sensory cells in the cortex differed from the firing of cells in the dorsal roots.

Our competitors were spending weeks, months, and even years developing
We simply held a slide projector in our hands
AND INSERTED INTO THE PROJECTOR



NOBEL PRAISE: After winning the Nobel Prize in 1981 for his work on the visual system, David Hubel found himself fielding numerous phone calls at his home and office.

We were interested in the differences for the visual pathway. Within our first month of working together, Torsten and I began to gain an understanding of what the primary visual cortex was doing. This was an enormous piece of luck. We were fortunate to get in on it at an early stage and had a huge advantage in that we took a low-tech approach. Our main challenge was figuring out how to record successfully for hours from single cells in the brain.

Our experiments were simple. We had an animal anesthetized and placed a contact lens over one of its eyes facing a screen several yards away. We then stimulated the eye by shining light and patterns on the screen. Our competitors were spending weeks, months, and even years developing fancy, mechanically driven stimuli. We simply held a slide projector in our hands and moved it back and forth; cardboard pieces we had cut out and inserted into the projector created the stimuli.

Things became more complicated later, but for a long time we were lucky enough to avoid using computers. We did not ignore them entirely, of course. At the time we were doing our early experiments it was wintry, and we found that if our laboratory felt too cold we simply had to turn on the computer—and it would generate enough heat to warm the room. We avoided computers for many years, but, alas, not forever.

When you win the Nobel Prize, you get fan mail. Sometimes the fan mail is a nuisance; sometimes it's entertaining; many times it's from Germany. (I don't know why Germans are so intent on collecting letters from Nobel Prize winners, but that's the case.) And often those letters ask, "What's the secret to your success?" By "success," they mean: How did you win the Nobel Prize? There is no simple answer. In our case, the major secret was to be lucky.

My own luck extends far back, to the schooling I received in Montreal. My high

FANCY, MECHANICALLY DRIVEN STIMULI. and moved it back and forth; cardboard pieces we had cut out CREATED THE STIMULI.

school was small by U.S. standards, with not many more than a hundred students in each grade. But we got to know our fellow students well, and by the eleventh grade, the last grade in high school, our principal knew us all by name. And our teachers tended to be excellent, especially a red-haired, fiery tempered history teacher who taught me to write.

Another morsel of luck was that my parents, like most Canadian parents at the time, had a hands-off attitude. They didn't know what I was doing much of the time, and they set foot in my school only once a year. I wasn't shuttled to German or Hebrew school, or tennis camp, or any other activities. This worked to my advantage: I had the opportunity to get sufficiently bored to be forced to think up things to do.

One of my main hobbies was chemistry. I had a laboratory in the basement in which I experimented with chemicals, preferably explosive ones. Sometimes our house shook, and sometimes our neighbors' house shook, which brought the police to the door.

Electronics was another hobby. Many of the things I built didn't work, which taught me the value of frustration. I teach a first year seminar at Harvard Medical School, and in six years of teaching a dozen students a year, I have yet to meet one who has ever held a soldering iron. Most students today don't even know what one is. These students skate circles around me when it comes to using computers and navigating the Internet, but they don't build anything with their hands. In my laboratory they perform some tasks manually, and they're absolutely delighted.

I was also consistently lucky in my mentors. In medical school in Montreal,

I linked up with Herbert Jasper, in whose electronics shop I worked for several summers. He was a wonderful, clear thinker. Another mentor—the first person I trained under at the Walter Reed Army Institute of Research—was Michael Fuortes, an Italian neurophysiologist with a sixth sense for biology.

Perhaps most important was another neurophysiologist with a sixth sense for biology, Stephen Kuffler. It was Steve



who suggested Torsten and I work together. He encouraged us to pursue whatever paths we wanted. When asked, he would offer advice, but it was always gentle rather than dogmatic or insistent. And so we could be creative.

Today, this model has changed dramatically. A typical small laboratory consists of four postdoctoral fellows, three graduate students, and the head of the laboratory who sits in his or her office writing grants and papers. The postdocs do as they're told and often miss out on

the important chance to grope and think up their own projects.

My final stroke of luck was in forming a collaboration with Torsten that lasted more than two decades. After our first experiment together, I remember returning home and telling my wife that our collaboration was going to work; we seemed to see eye-to-eye on many things. As we went through recording the cells, trying to figure out how each one worked, each endeavor felt like a fishing trip, in two senses of the phrase: not only were we searching blindly, but we were having fun. We rarely went home at night without having learned something new.

It's funny to win a prize like the Nobel, because it's well rewarded. Although it wasn't as lucrative in 1981 as it is now, my wife and I were able to put our three boys through school with the prize money. One problem, though, according to the cynical view, is that once you win the Nobel Prize, you'll never receive another cash award. I remember Francis Crick saying, "The thing about these prizes is that you have to win them in the right order."

Order or no order, it certainly has been fun. I would be ungrateful indeed if I thought winning prizes was bad. I'm all for the prizes, the more the better. It's just that one has to realize what a significant role luck plays in the outcome of research. ■

David Hubel, MD, the John Franklin Enders Professor of Neurobiology, Emeritus at Harvard Medical School, shared the Nobel Prize in 1981 with Torsten Wiesel for "discoveries concerning information processing in the visual system."

FIRST CUT

A pioneer in organ transplantation recalls a life enriched by years—and people—at Harvard Medical School.

BY JOSEPH E. MURRAY

From my earliest memory I wanted to be a surgeon. There were no physicians on either side of my family; my father was a judge and my mother was a schoolteacher. Our family doctor, though, exerted a powerful influence on me. Whenever he entered our home he brought warmth and reassurance. As a teenager I often drove by Harvard Medical School's Quadrangle with my father en route to his law office. The marble buildings shone magically, and I somehow knew I would end up at medical school there. My love affair with HMS was further stoked in high school when I read *Memoirs of a Small Town Surgeon*, the autobiography of an alumnus, John Brooks Wheeler, Class of 1879, whose anatomy professor was

the renowned Oliver Wendell Holmes, Class of 1836.

In September 1940, I entered Vanderbilt Hall as a first-year student. Since then each year has been more fulfilling than the previous one. Chiseled into a marble wall connecting two HMS

buildings are the words "Life is short, and the art long, the occasion instant, experiment perilous, and decision difficult." I would muse on those words on my way to class.

My four years at the School were all I dreamed they would be. Classmates and

faculty were stimulating and friendly. Hospitals were filled with patients with a variety of needs. Although the hours of study and hospital duty were long, life was rich and full. Symphony Hall and the Isabella Stewart Gardner Museum were within walking distance, squash courts were available for daily exercise, our singing group met weekly, and weekend bicycle trips during wartime gas rationing were fun. Club dances added variety. It was heaven. And during my last year of medical school, I met my wife, Bobby, at a Vanderbilt Hall party. For the past 61 years we have shared our lives with splendid colleagues, faculty, and students.

During World War II, medical school courses and residencies were accelerated. Our graduation took place in the Vanderbilt gym on December 31, 1943, with Harvard University President James Conant as our speaker. Our class was in military uniform: we in the Army as privates, those in the Navy as officers. We Army guys drilled early every



PHOTO: EITTMANN / CORBIS

A PERFECT MATCH: Richard Herrick is wheeled out by his identical twin brother, Ronald, as he leaves Peter Bent Brigham Hospital in 1954. The twins made history when Ronald donated a kidney to Richard, who was suffering from nephritis. Joseph Murray performed the operation, earning him a Nobel Prize and the moniker "The Father of Transplantation."

morning in the Vanderbilt parking lot while our Navy classmates hooted at us from their windows.

For my first permanent military duty, the Army randomly assigned me to a plastic surgery center at Valley Forge

General Hospital in Pennsylvania. There we treated battle casualties from the European, African, and Pacific theaters. I reveled in the technical challenges of reconstructive surgery, imaginatively restoring noses, ears, and eyelids; rebuild-

ing arms, hands, and legs; and resurfacing severe burns while at the same time trying to restore the morale of those severely damaged soldiers.

My Valley Forge experience decisively molded my surgical career. I found recon-

Paradoxically, it took the UGLINESS OF WAR for me to appreciate the intrinsic beauty of COSMETIC SURGERY.

structive surgery more challenging than excisional surgery. Paradoxically, it took the ugliness of war for me to appreciate the intrinsic beauty of cosmetic surgery.

At Valley Forge we treated hundreds of burn patients. One was so near death he required skin grafts from an unrelated donor. The skin allografts would not survive permanently, but they were lifesaving as a temporary skin cover because they controlled sepsis and fluid loss. I can still recall my wonder at observing daily the mosaic of autografts and allografts. At first all grafts looked the same: healthy and vascularized. But after a week the autografts would begin to grow and extend beyond their original margins while the allografts would lose their pink color and start to melt away. I wondered how the body could be clever enough to distinguish between the cells. What was the process of rejection? No one seemed to know. This was my introduction into the world of transplantation biology.

After my Army discharge and completion of surgical and plastic surgical residencies, I eagerly joined the renal transplant team at the Peter Bent Brigham Hospital. Transplantation biology merges clinical skills with basic science. My first research project was the development of an operation for the permanent survival of kidney transplants in dogs. After extensive collaborative studies, which included all hospital services, we were ready to transplant a human kidney from a living donor. We had discussed the situation with physicians from other hospitals, lawyers, and clergy of all denominations. In December 1954, our team transplanted a kidney from a healthy identical twin to his terminally ill brother using the exact surgical techniques we had developed in the dog laboratory. This was the world's first successful human organ transplant, and it had worldwide influence.

When I shared the Nobel Prize in 1990 with E. Donnall Thomas '46, I was

thoroughly aware of the many who had contributed to making organ transplantation a clinical reality. I thought of HMS, the hospitals that had nurtured me, and all the dedicated people involved. George Thorn had originated the concept of renal dialysis and transplantation. Francis Moore '39 had mobilized the Department of Surgery in support of Thorn's vision. John Merrill '42 had served as Thorn's first nephrologist. J. Hartwell Harrison '33 offered expertise in urology, Gustave Dammin in pathology, and James Dealy, Jr. in radiology. David Hume had operated in earlier experimental transplants. Hundreds of residents and fellows contributed. But I also thought of the thousands of patients living all over the world with transplants not only of kidneys but also of the liver, heart, lungs, combined heart-lungs, pancreas, intestines, and extremities.

In the summer of 2004, more than 1,800 transplant recipients participated in the U.S. Transplant Games in Minneapolis to celebrate their vitality. They competed in multiple events, including track and field, swimming, basketball, and tennis, with gold, silver, and bronze medals for winners. As the contestants marched around the stadium, many eyes filled with tears of joy. The entire spectacle was a most wholesome expression of gratitude for living. It was humankind at its best.

Ronald Herrick, the first living donor, and I jointly lit the Olympic torch. The governor of Minnesota asked whether I was proud of my role as the "Father of Transplantation." I politely disagreed with the term "proud." Pride is not necessarily a virtue in a theological sense. Instead I emphasized how grateful I was for the opportunity to help patients in need. More than 400,000 people have already received transplants.

Service to society is the ultimate reason for the existence of the medical pro-

fession. No one person is responsible for medical progress. We are all part of a team and depend on other physicians, institutions, granting agencies, administrations, nurses, social workers, technicians, and research fellows. They are too often the unsung heroes.

There are other unsung heroes in life as well. I recalled one of them vividly when I received a package from the Bronx, a year after I received the Nobel Prize. One of my HMS classmates, Kevin Cosgrove, had died, and his sister was forwarding several class-agent letters of mine she had found while cleaning out his apartment. She wrote that he had spent his life working with indigent patients in the New York area.

I remember Kevin well. He had been brought up in northern Vermont and had attended Georgetown University. He had a clubfoot that required a heavy boot and leg brace. This did not impede his medical school education; it likely enhanced his empathy toward his patients. He played the violin with the same passion he showed when caring for his patients. Today I salute Kevin as an outstanding example of a physician toiling humbly at his life's work.

I am honored to be part of Harvard Medical School. I know of no place better to remain eternally youthful in spirit and optimism. I appreciate the School for widening my horizons, supporting my hopes, fulfilling my professional needs, and keeping my eye firmly directed toward the future.

My life's journey has been guided by Albert Schweitzer's concept of reverence for life, by the physician's creed of first doing no harm, and by the mission of Harvard Medical School, which serves as a perpetual fountain of youth. ■

Joseph E. Murray '43B shared the Nobel Prize with E. Donnall Thomas '46 in 1990 for "discoveries concerning organ and cell transplantation in the treatment of human disease."

BEYOND THE MICROSCOPE

An award-winning virologist prizes the joy of teaching medical students.

BY THOMAS H. WELLER

At an unusually young age, I shared what is generally regarded as the world's most prestigious scientific prize. Yet most of my life as a scientist and educator still lay before me. While receipt of the Nobel Prize brings much attention, in looking over my career I have concluded that I'd rather be recognized as an effective teacher than as a Nobel laureate. ■ I began teaching in 1948 as an instructor in the Department of Comparative Pathology and Tropical Medicine at Harvard Medical School. A year later the department was renamed the Department of Tropical Public Health and transferred to the Harvard School of Public Health. In 1954, I was appointed head of that department. I was teaching medical parasitology to second-year medical students at the time, and I agreed to continue teaching the Medical School class.

When my colleagues and I began teaching public health students, I realized we were dealing with two different types of curriculum. In the Medical School, we were teaching how to diagnose and treat

an individual. At the school of public health, our patient was a *population* of people. I continued to teach in both schools until 1979, when the Medical School parasitology course was terminated.

A professor may wonder whether his or her teaching changes anything. Will the students accept the ideas offered? I have two prominent examples from my own career. In 1963, I gave the Class Day address to Harvard medical students, which stressed the breadth, vitality, and social significance of public health. The talk was published in the *New England Journal of Medicine*. A young physician, William Foege, read that article and decided to go into public health. He came to our department, earned a degree in public health, and joined the Centers for Disease Control and Prevention, where he had an amazing career. He became head of the institution and played a key role in the global eradication of smallpox. He now serves on the advisory board that helps direct Bill & Melinda Gates Foundation money for the benefit of the developing world.

The other example came from a program that provided National Institutes of Health funding to send senior-year medical students overseas for training in tropical medicine. In 1965 I requested a

The years after our **POLIO WORK WE UNUSUALLY** as it proved to be an **UNUSUALLY** We had lucky breakthroughs with other viruses, though. One,

report of the medical students' experiences. One student, Steven Schroeder '64, spent eight weeks working in Brazil. "The experience I was privileged to have," he wrote, "was one of the most challenging, constructive, and stimulating of my medical career." He decided to do something with public health and during his subsequent career in the field has done outstanding work. In fact, when he became chairman of the Robert Wood Johnson Foundation, Steve was recommended because of his capacity to meld medicine and public health.

When I started my medical career, I decided to go into pediatrics and pursue research on infectious diseases in children. I was curious, and I had my share of luck. I began with an internship at Children's Hospital in Boston, where Kenneth Blackfan, the head of Children's internship program, required a year in either pathology or bacteriology before interns could work on the wards. Frederick Robbins '40 and I had six months together in bacteriology, and then I moved to pathology, where I spent six months working with another classmate,

Lawrence Kingsland '40. Kingsland had helped us develop tissue cultures when I worked with John Enders in my senior year. In the Department of Pathology at Children's, we set up a simple roller-tube tissue culture system. We wanted to isolate the virus that causes chickenpox and believed cultures of human tissue were necessary. Kingsland cultured a fragment of tissue obtained at the autopsy of a child.

Kingsland and I inoculated some of the tissue cultures with varicella vesicle fluid and saw interesting intranuclear inclusions in the stained cultures. We knew



CONQUERING HEROES: Long-time friends and collaborators shared a Nobel Prize in 1954 for their work on the poliovirus, from left: Thomas Weller, Frederick Robbins, and John Enders.

tackled other viruses. I studied varicella virus for six years, **DIFFICULT AGENT TO HANDLE.** a complete surprise, was the isolation of the cytomegaloviruses.

such inclusions might be caused by the herpes simplex virus. At that point, however, we both went into military service and had no chance to determine whether we had actually been growing a virus.

When I joined Enders in 1947 to establish the research arm of the Division of Infectious Diseases at Children's, I resumed efforts to isolate the varicella virus. It seemed clear that the virus would not replicate in any animal. Therefore human tissue culture appeared to be the only avenue available to isolate the virus.

In March 1948, I obtained human embryonic tissue from the Boston Lying In Hospital and prepared 12 flask cultures of the tissue. I inoculated four of the flask cultures with throat washings from patients with chickenpox and used another four as controls. Our varicella cultures were negative; later we learned that only rarely can you isolate varicella virus from throat washings but that it's easy to isolate it from varicella vesicle fluid.

About the same time Gilbert Dalldorf was isolating viruses—which he called the coxsackieviruses—that paralyzed mice. I was interested in viruses that caused paralysis in mice, so with curiosity, I took some Lansing poliovirus that was in the freezer and inoculated the remaining four flask cultures. When I took the fluid from the Lansing polio cultures and inoculated it intracerebrally into mice, to my amazement, the mice became paralyzed. I maintained the cultured virus through two tissue culture passages and then discussed the experiment with Enders. In May, Enders asked Fred Robbins to join me in growing poliovirus in tissue cultures. For the next year or so, we just grew polioviruses. We first published our results in 1949.

At that time, polio was causing enormous fear in the U.S. population. From 1940 to 1944 the National Foundation for Infantile Paralysis cared for nearly 80,000 patients using its respirator system. In 1944 the World Health Organization esti-

mated that the United States was averaging more than 35,000 polio patients a year.

Although our work did lead to the Salk and Sabin vaccines, that wasn't the principal consequence of our findings. In 1954, when Sven Gard presented us the Nobel Prize, he noted that our findings would do for virology what Robert Koch's discovery of media for the growth of bacteria had accomplished for bacteriology: We popularized the use of tissue culture for the study of viruses and promoted its use by many virologists.

The years after our polio work we tackled other viruses. I studied varicella virus for six years, as it proved to be an unusually difficult agent to handle.

We had lucky breakthroughs with other viruses, though. One, a complete surprise, was the isolation of the cytomegaloviruses. Eli Chernin and I had been growing a protozoan parasite, *Toxoplasma gondii*, in tissue culture. A patient was admitted to the infants' ward of Children's Hospital with a questionable diagnosis of congenital *Toxoplasma* infection. He had chorioretinitis, cerebral calcification, and hepatosplenomegaly.

Hospital physicians were about to perform a liver biopsy on the infant when one doctor asked me, "Would you like to isolate *Toxoplasma* from the liver of this patient?" I replied, "I sure would!" I inoculated the liver biopsy material into cultures of human embryonic skin muscle cells. We grew a virus later named cytomegalovirus. Thus we accidentally isolated a new virus.

Then came rubella. During the war, Australian researchers had shown that pregnant women who contracted German measles during their first trimester were likely to give birth to babies with congenital maladies. When tissue culture became prominent for growing viruses, many laboratories tried, and failed, to isolate the rubella virus. We, too, tried four times to isolate the virus but failed each time.

In 1960, my younger son, Bob, developed a high fever, then a rash. He had

severe pain in his joints and painful lymph nodes. His infection bore some resemblance to German measles, but he was much sicker than most patients with rubella. I inoculated his urine into cultures of human amnion tissue cells and examined the cultures microscopically every day. On day 24, I saw some peculiar cytopathic changes that gradually progressed to involve all the cells. Franklin Neva joined me in studying two German measles outbreaks at that time, and he isolated the same type of virus.

Meanwhile, at the Walter Reed Army Institute of Research, scientists were also pursuing the rubella virus. They were using a different technique, one developed in England by David Tyrrell for use on the common cold virus. Tyrrell showed that he could grow some viruses that were not cytopathic. Their presence was revealed, however, upon the addition of viruses that were normally cytopathic. If rubella virus was present, there was no cytopathology. The Walter Reed scientists used this interference technique to isolate rubella virus. When we exchanged cultures, we found that our viruses were identical with theirs. We were able to publish our findings back to back in the same journal.

Since then, the field has changed tremendously. Then every child had mumps, measles, rubella, and chickenpox. From my older son I isolated one strain of varicella virus; from my younger son I isolated the rubella virus. The availability of tissue cultures made possible vaccines for the common viral infections of children. Just this past spring a measles epidemic broke out in Boston. Such an event is now unusual here, and we're lucky it is. ■

Thomas H. Weller '40, the Richard Pearson Strong Professor of Tropical Public Health, Emeritus at the Harvard School of Public Health, shared the Nobel Prize in Physiology or Medicine in 1954 with John F. Enders and Frederick C. Robbins '40 for the cultivation of the poliomyelitis viruses in tissue culture.

INVESTING IN GLOBAL FUTURES

Harvard Medical School carries its proud leadership traditions into a future that embraces an international mandate.

BY JOSEPH B. MARTIN

Before looking to the future of Harvard Medical School, I want to visit its past. An alumnus, Robert Cotsen '56, recently presented me with an original edition of the proceedings of the first few years of the Harvard Medical Alumni Association, which was founded in 1891. This fascinating book touched on three contentious issues of the time. ■ One controversy involved the ongoing appeals from the professional schools of law, business, and medicine to gain suffrage in electing members of the Board of Overseers, denied on each occasion by the Harvard Corporation, despite support from the president.

The second issue was the expansion of the medical school curriculum to four years, copying the plans of the newly opened Johns Hopkins University Medical School.

But the third and most interesting issue involved a statement by William

Osler, who had recently moved from Harvard to Johns Hopkins, about the wisdom of admitting women to medical school. In that statement Osler stood firm in his opposition to coeducation because, he noted, of the first Hopkins class admitting women, one-third of

the women had married and withdrawn after the first year. Osler concluded that with four years of school no woman would be left to graduate. His comments were a bit tongue-in-cheek, though: Only three women had been admitted, one of whom married.

More than a century later we have our own issues—and our own opportunities, not just to continue making a national mark on medicine but an international one as well. Perhaps the most exciting activities at Harvard Medical School over the past year have been those associated with the medical education reform effort. We believe the curricular changes introduced with the matriculating class this summer will captivate the interests and expand the experiences of our incoming students as they embark upon their courses of study.

The most creative and interesting of these changes is the principal clinical experience. Otherwise known as "the



The new format offers students a **LONGITUDINAL** of how diseases progress, the opportunity to **EFFECTIVE MENTORING**

third year," the principal clinical experience will place groups of students into one of our wonderful teaching hospitals for their entire clinical training rather than rotations distributed among various hospitals. This format offers students a longitudinal experience with patients, a better understanding of how diseases progress, the opportunity to work more closely with faculty, and a chance to cultivate more effective mentoring relationships. Pilot programs are under way at Brigham and Women's Hospital, the Beth Israel Deaconess Medical Center, Cambridge Health Alliance, and Massachusetts General Hospital.

Another important development has been the establishment of new leadership and a new set of functions at the Countway Library of Medicine. The Countway renovation, which we undertook seven years ago, has resulted in a wireless network throughout the library. The library will house the new Center for Biomedical Informatics. Led by Isaac Kohane and Alexa McCray, this center will facilitate collaborations in biomedical informatics among our faculty and students.

This past academic year has also witnessed the development of new programs that encompass cross-departmental and cross-school educational experiences. In September 2005, we joined with Harvard Business School in launching the MD/MBA program, a five-year path tailored for the development of administrative leaders of academic centers. More recently, we established a combined MD/PhD degree in social sciences. We have also created new graduate degree programs that cover subjects across the Harvard experience and that are relatively new within the rubric of the evolving life sciences, such as systems biology—the new physiology—and chemical biology, the new biochemistry.

Interestingly, half of the Class of 2006 took five years or more to graduate, not because they had difficulty

with their studies, but because they also pursued joint degrees—such as a PhD, an MPH, or an MBA—or because they undertook research or participated in international work. Forty percent of the class spent some time abroad, mostly in sub-Saharan Africa, Central America, or South America.

Hands Across the Waters

Our collaborations have been growing globally. The HMS Division of AIDS, for

example, has been effective in developing research protocols and clinical trials in a number of countries, including Vietnam, South Africa, and India. Judy Lieberman '81, HMS professor of pediatrics at the CBR Institute for Biomedical Research and Children's Hospital, heads the division, which participates in extensive research and educational collaborations in the developing world. Lieberman's own research focuses on the role of microbicides and of mucosal host defense mechanisms against HIV.



PHOTO: KAREN BORGES

EXPERIENCE with patients, a better understanding work more closely with faculty, and a chance to cultivate more RELATIONSHIPS.

The Department of Social Medicine, renowned for its work in medical anthropology and medical ethics, recently underwent a transition. After six years of leadership, Byron Good stepped down from the chairmanship. Succeeding him is Jim Kim '86, well known for his work with Paul Farmer '90 in the Partners in Health program in Haiti, Peru, and Russia. Kim returns to Harvard after spending a two-year leave of absence at the World Health Organization, where he was the deputy director in charge of the "Three by Five" initiative. Although this program fell short of its ambitious target—ensuring treatment of three million Africans living with HIV/AIDS by 2005—it has been deemed highly successful nonetheless.

Another international venture has been the Harvard Health Publications, which has become an extraordinary enterprise not only in North America, but also throughout the world. This program published 21 books last year, with 8 more due next year. The five newsletters now reach nearly 700,000 people each month; the 46 monographs in print sell an estimated 100,000 copies a year. Magazine partners include *Newsweek* and *Better Homes and Gardens*. A weekly newspaper column appears in 60 papers and has an estimated 5 million readers. In addition to its national reach, Harvard Health Publications are now in print in Europe, Central and South America, Australia, and Asia, and translations have been made into Arabic, Chinese, Indonesian, Italian, Japanese, Korean, Polish, Spanish, and Turkish.

I am proud also of the wonderful work of Harvard Medical International, which is in its tenth year. In a recent external review, HMI received high praise for its many activities throughout the world. HMI is now engaged in 40 initiatives extending from curriculum reform in medical schools in Germany and China, to continuing medical education programs in India and South America, to the introduction of new efforts to improve

local health care and launch research programs. Work is under way in 22 countries; last year, 200 HMS faculty members participated in these programs.

Of particular note has been the expansion of our activities in Dubai, an emirate many believe will emerge as the Singapore of the Gulf region. Three years ago we were invited to participate in the development of the Dubai Healthcare City. I have since had several opportunities to meet with the leaders there to plan what we believe will be a major academic development in the region.

We were especially pleased to launch the Dubai Harvard Foundation for Medical Research. Earlier this year we broke ground in the heart of the emerging health care facility for a 300,000-square-foot center that will be dedicated to education and research. We are planning, together with the leadership in Dubai, an academic tertiary care hospital that over time is expected to become the center of world-class treatment for the Gulf region, not only for the wealthy but also for the workers who in the past have not had full access to the health care they deserve.

What's in Store

As we face the future, we must tackle a number of concerns, particularly the flattening of the National Institutes of Health budget. We are particularly eager to work with our hospitals to develop interim support to retain the best and brightest of our faculty investigators. Harvard University resources must be directed to preserving our strengths. Meanwhile, we will continue our efforts to recruit outstanding young faculty with a particular emphasis on diversifying our faculty. All of these efforts will require new resources.

In addition, I would like to note three major issues that I believe will consume much of our time and effort over the next decade. The first is the future of the

Harvard School of Public Health. The school, which has so many productive associations with HMS, faces enormous challenges, both physical and strategic. If the school does indeed decamp from the Longwood Medical Area to a revitalized campus in Allston, what impact would that have on our collaborations in many areas, particularly epidemiology and biostatistics? In terms of strategic plans, particularly with respect to international efforts, it is difficult now to separate the role of public health from our growing impact in international medicine.

The second issue is planning for the future of health sciences research at Harvard. Again the issues here are structural—should we relocate major portions of our Longwood activities to Allston, which will undoubtedly be the major site of science expansion—and strategic, in terms of our vision for the future of HMS.

Third—and perhaps the most important from a dean's perspective—is the need to keep our focus on the crucial importance of our educational mission. I like to remind our faculty that we are, after all, the Harvard Medical School. With ever-expanding clinical and research programs and additional faculty recruited for these missions, how do we ensure our students receive the attention they deserve? In addition, we must address the persistent issue of student debt.

Our alumni provide us with invaluable advice and critical financial support, which we have turned almost entirely to the strengthening of scholarships for our students. More than a century out from the first gatherings of the Harvard Medical Alumni Association, we still value our graduates' guidance and attention to the pressing questions ahead. ■

Joseph B. Martin, MD, PhD, is the dean of Harvard Medical School, where he also serves as the Caroline Shields Walker Professor of Neurobiology and Clinical Neuroscience.



Reunion Repo

19
46**60th—1946 George Richardson**

Too few—17—of us 70 survivors of our 137-member class attended HMS Alumni Day. For those of us who did attend, it was heartening to hear the optimism and wisdom of Dean Joseph Martin, who welcomed us to a new era in which competition is no longer based on price or quality but rather on who can collaborate most effectively in an interactive global world.

Several Nobelists—David Hubel, Bernard Lown, Joseph Murray '43B, and Thomas Weller '40—shared their visions. Lown, too, reminded us that the essence of science is a network of collaboration and that our challenges are global. The whole world must be our concern: "There can be no healthy United States in a sick world."

One of our class's two Nobelists, E. Donnall Thomas, pioneer of successful bone marrow transplantation, had planned to come but was prevented by acute health problems at the last minute. We would have liked to have learned more about the increasing number of long-term survivors of his procedure.

Our other Nobelist, D. Carleton Gajdusek, is a remarkable polymath, as we observed in our undergraduate days. His achievement seems not to have been an extrapolation of existing research. It arose from studying the transmission of a disease in natives of New Guinea and coming up with the concept of "slow viruses," a number of which are now identified as prions. Gajdusek lives in France.

On Friday afternoon a number of us enjoyed a reception to celebrate classmate Thomas Donovan and family's gift to Brigham and Women's Hospital of their remarkable collection of

antique surgical equipment, including artificial aortic and heart valves.

We were treated to a magnificent dinner in Gordon Hall—still Building A to some of us—on Friday evening. The great Faculty Room had been cleared of chairs, which were replaced by round tables that had centerpieces brimming with roses, but still low enough to converse across, and the cuisine was outstanding. We had books and mementos on display, including a copy of Mahlon Hoagland's colorful and amusingly illustrated textbook, *The Way Life Works: The Science Lover's Illustrated Guide to How Life Grows, Develops, Reproduces, and Gets Along* (Three Rivers Press, 1998) and copies of Peter Sifneos's autobiographical thriller, *Escape* (Vantage Press, 1998), recounting his flight from Paris in World War II as the German occupation advanced.

In addition to great conversation across and between tables, the dinner provided an opportunity to hear a short but profound summary of current knowledge about aging, given impromptu by an outstanding geriatrician from our class, David Solomon. Unfortunately, the most clearly established formula for slowing the aging process is to starve just a bit.

On Saturday we had a rained-upon but well-tented clambake at my seaside perch in Nahant. The wives, sons, daughters, and friends who came are among the wonderful people who make longevity possible and pleasant.

In the end, while we all enjoy sharing the remarkable achievements of those still living, we remain aware that, as always, too many have been lost too soon. Let's hope that as many of us can meet again next year, as comfortably and affordably as can be. ■

arts



19**51**

55th—1951 Tor Richter

The Class of 1951 attended our 55th reunion in perhaps the expected number but with surprising enthusiasm and panache. Quite a few came long distances through filthy flying and driving weather.

In his reunion report Bill Danforth reflected, "Today young people entering medicine are as full of hope and energy as we were but have far better tools." No better illustration of this could be found than Thursday morning's faculty symposium on stem cell research. Data, hypotheses, techniques, and instrumentation that seem impossible yet exist were described to a packed auditorium of rapt alumni. And to think I spent the summer of 1947 dissecting a dogfish shark with Jim Watson!

The class social calendar kicked off with dinner at the Fosters' home, an event that, perhaps to their dismay, has become an institution. Food, drink,

hospitality, and companionship were in abundant supply. The Friday class dinner featured more of the same, and the festivity was enhanced by fog-enshrouded views of Fenway Park and the Charles River basin from the top of the downtown Harvard Club. The conversations ranged from "How are the kids?" to "How do we feed the world?" and "How do we keep disadvantaged children in school?" Bob Boomer and George Murphy enlivened the banquet by appearing in full Scottish regalia. George offered some dour doggerel on aging, inspiring Al Skinner to explain and declaim "The Blue-Back Spelling Method." Perfect diction, though we could have used Tut's southern drawl.

Two years ago, raucous red-eyed cicadas appeared at our place, completing their 17-year cycle. I observed them carefully, realizing I probably wouldn't see them again. But I hope to see all of you again in five years' time. ■

1956

50th—1956 Joel Alpert

From 25 plus to 75 plus in what seems like seconds rather than years was a major sentiment expressed by the Class of 1956 as we celebrated our 50th reunion. Our reunion theme was stay long and talk much and that's what we did in record setting fashion.

Setting an HMS record, 138 classmates, spouses, and guests—including four class widows and one daughter—attended a marvelous reunion dinner at the Museum of Science. We began the evening with Charlie Radding reading his original poem, "In Memory of Departed Classmates." Graduation pictures of our 43 departed classmates were shown as Arnie Weinberg read their names, and we honored them with a silent memorial minute.

After the memorial it was celebration time. During the reception and dinner Al Menno treated us to a picture trip of our 50 years, which included the *Asculapiad*, graduation, current pictures, and much in between. Bob Cotsen presented Dean Joseph Martin with a unique 1891–92 bound copy of the minutes of the first seven meetings of the newly established Harvard Medical Alumni Association. Bob allegedly found the book for 25 cents in a shop that sells pornography—an experience, and donation, that was priceless. (Our class's sense of humor has not diminished!) Class agent Bob Goldwyn announced preliminary numbers of our class gift—now more than \$800,000. Three class members made major dona-

tions, and 72 contributed. Our efforts led the development office to establish a new special bequest program, which we hope will be available for future classes.

Our final program event was a musical rendition titled "In Spite of Time," composed and directed by John Grover, accompanied by Dick Sogg at the piano and with a cast including John, Charlie Barbarisi, Bob Chamberlin, Saul Rosen, and his wife, Deborah Kieffer.

On Friday, after lunch and the class photograph on the Quad, 92 of us headed to the Stage Neck Inn in York, Maine. We continued our tradition of fellowship, picture viewing, far-reaching discussions of politics and our considerable non-medical interests, and of course singing with Dick at the piano. Banks Anderson played his post-HMS-acquired violin. We spoke about our role models and heroes at HMS. The rain kept us indoors, but no one seemed to mind.

The inevitable farewells took place as the weekend ended with pledges to gather again, perhaps not waiting the full five years. For four short days we recaptured the magic that remains of HMS '56. Afterward, we were surprised to learn that we were the only reunion class in 2006 to spend the weekend away—a practice we started with our 10th reunion and one we pledged to continue at our 55th.

Were we special? Our reunion book, edited by Steve Sehatzki and Bob Chamberlin, with an updated class history by yours truly, suggests we were. ■



1961

45th—1961 Clarence Zimmerman

Rain. It poured on Reunion Thursday. It rained off and on Friday and Saturday. If water weren't one of New England's greatest natural assets, a fellow could get a little churlish. No matter; thanks to modern tent technology, we all stayed dry, and the weather failed to dampen the spirits of the Class of 1961 as we renewed friendships, traded war stories, and yes, got in a little gossip.

Yeu-Tsu Lee made the longest trip, coming from her home in Hawaii. Norm Cohen and his irrepressible Françoise flew from France and their Norman house, before returning to California. In from the Sunshine State were the Shefts, Steckels, and Youngs, while the Roses blew in from Galveston, where, Bob assures me, the breakwaters will hold. Class members kept arriving and leaving for this moveable feast, but there were always close to 60 on hand.

On Thursday morning, several of us attended a symposium on stem cells. The potential of this research—and Harvard's excitement about it—was well transmitted by the presenters. The next morning we heard a series of recollections by Nobel laureates. A common thread ran through their stories: love what you do, be ready for hands-on per-

severance, and get lucky. After this, the class photograph was taken. But the true film history of our class lies within the archives kept by Dave Lewis and Peter Liebert, who continued their indefatigable smile-and-snaps. Someday, if we can stand the receding hairlines and advancing girths, it will all be revealed.

Friday night was the gala class dinner, and Saturday dawned sodden but, aided by a map, apparently drawn up between the World Wars, we made our various ways to Peter and Helen Randolph's Wareham seaside house, a magnificent site overlooking Buzzards Bay. And then the rain finally ceased. The Fischers, Hoffers, and Roldes arrived, and we dug into about as deluxe a clambake as I have ever seen. As we were saying our goodbyes and thanks to the Randolphs, a beam of sunlight hit their lawn, the first we had seen all weekend. Maybe it was just the surprise, but that slanting evening shaft against the steel gray of the water and deep purple of the clouds held the magic of the New England coast.

Many of us will attend our 50th college reunions next spring, surely a big marker. But I prefer the intimacy and camaraderie of HMS reunions. Think about it, and plan to come back in five. We will make it worth your presence. ■





19
66

40th—1966 Jay Kaufman

The great HMS Class of 1966 began its reunion weekend on Thursday as guests of Jensie and Bill Shipley at their lovely home in Chestnut Hill. Kent Ravenscroft was an early arrival and, in fine form, reminisced about our Vanderbilt Hall years. On Friday morning, class agent Gene Appel presented the alumni association with our gift, braving the elements despite a bad back.

Friday evening, the class met at the Castle at the Cabot Estate, where Bob Greenes and Phil Stubblefield reside. Bob, Phil, and their wives arranged a delectable buffet dinner for the 70 attendees. After dinner, each member of the class gave a synopsis of his or her last five years and offered personal insights into the practice of medicine. Highlights included Ned Cassem's approach to counseling the seriously ill, Al Baker's reflections on the medical care system, Joel Friedman's indefatigable optimism about the future, and

Charlie Hatem's comments about his career in teaching medicine.

On Saturday, the class cruised Boston Harbor to the Kennedy Library, enjoying a dinner at sea and further bonding with classmates. Scott Nelson, class president for life, moved easily among his constituents, and unofficial class photographer Bob Owen made sure we would have a pictorial record of our gracefully aging selves. The female members of '66 were well represented, with Jane Bradley Alavi, Jane Marmor, Anne Rassiga, and Joan Lamb Ullyot in attendance. Plastic surgeons Gerry Colman, Norm Levine, and Frank Welsh did not, to my knowledge, offer their services to any of us, but it was comforting to know that cardiac surgeons Bruce Brener and Doug Payne were present. Some classmates, including David Krant and Michael Pine, showed off their progeny. You outhbred yourselves, guys.

All classmates were in good spirits, and we look forward to the next opportunity we can share time together. ■



19⁷¹

35th—1971 Mark Goldman

After the Alumni Day activities on the Quad on Friday, the Class of 1971 reassembled at the home of Alex and David Harrison who graciously hosted a cocktail reception and buffet dinner. The turnout was good, and the usual suspects were on hand: Frank Berson, Bill Boger, Judy Alexander Brice, David Crofoot, Jane Fossum, Skip Fuller, Barbara Gilchrest, John Gittinger, Bill Goodson, John Hamilton, Janet and Bob Hickman, Jon Jacobs, Tom Jones, John Kelly, Peter Kenny, Bill and Cynthia Kettryle, Bob Klein, John Lease, Collins Lewis, C. D. London, Bob Naylor, Georgia Newman, Stu Orkin, Joel Schwartz, Dave Spiegel, Sandy Ullman, Paul Walter, and yours truly. Surveying the numerous and excellent bottles of wine

at the reception, one could only see the truth of Churchill's observation: "So much to do, so little time."

The following day, Saturday, we tackled the traditional Woodman's clambake at the home of Alice and Skip Fuller, who had been given a 25 year break after hosting us at the 10th reunion. True to form, they were marvelous hosts. The aforementioned crew was joined by Tommy Albert, Bob Bahr, Craig Donaldson, Larry Eron, and Dave Lowe.

Despite the marginally inclement weather, everyone had fun. Larry Eron got the award for traveling the farthest to the reunion—from Hawaii. If anyone wants the results of the confidential questionnaire, email me and I will send you a copy in PowerPoint format. My email is markgoldman9@comcast.net. ■

1976

30th—1976 H. Thomas Aretz

Forty members of the Class of '76 and their significant others made it to two events to celebrate the 30th anniversary of our graduation.

On Friday night we gathered at Jumbo Seafood in Newton for an informal dinner, and on Saturday afternoon a slightly smaller crowd braved the rain at the MIT Endicott House in Dedham for a clam-bake. About half of the class contributed to the class reunion book, sharing what has happened to them in the last five years. The stories fascinated and touched, and we appreciated the willingness of our classmates to share the ups and downs of their lives. We learned of new arrivals; trials and tribulations; a few departures, some happy, some sad; grandchildren (?); weddings; new careers; serious illnesses and injuries; deaths of family members; and empty nests as children have gone off to schools, jobs, and sometimes far-flung destinations.

From the reading and certainly from the conversations, it was clear, howev-

er, that most of us are content, even happy, and few classmates express regrets. Life remains full of challenges, ample opportunities to learn, and next careers; Hugh Auchincloss, after 30 years in Boston, for instance, has recently moved to Bethesda as the new deputy director of the National Institute of Allergy and Infectious Diseases.

Retirement, nonetheless, was a topic of discussion, but most of us cannot imagine not working in some capacity. On the other hand, bragging about work hours was replaced by similarly unrealistic tales of golf handicaps. We all hope that in five years more of our classmates can join the hard-core "reunionists"—such as Ray Aller, Marvin Bittner, Steve Brooks, Johnson Lightfoote, and Jaime Rivera—if for no other reason than to hear the ever-expanding Bittner epic poem, the latest rendition of which was passionately performed at Friday night's dinner. We wish the Class of '76 well and hope to see many more of you in 2011. ■



1981

25th—1981 Robert Sackstein

When we gathered early Thursday morning in Building A to pick up our nametags, a small surprise greeted each member of the Class of 1981: Our photographs from the "face book," distributed in the first week of medical school, were placed on labels to attach to our nametags. As we affixed our faces to our nametags and watched others do the same, we found our common connections quickly and rekindled fond memories.

We began our Class Symposium with a moment of remembrance for Raymond Dickson; in attendance were fellow classmate Karen and the Dickson children, who made the trip from Minnesota. Stephen Hoffman organized the symposium into three sessions—Business Interfaces with the MD, Society Interfaces with the MD, and Science, Society, and Medicine, which reflected the personal and professional journeys of many class members.

Michael Payne punctuated the third session with some inspired oratory, and the question-and-answer period generated discussions that persisted through a fabulous dinner that evening at the New Research Building. The highlight of the

day was the incredible piano performance of Richard Kogan, who played Gershwin's "Rhapsody in Blue" as our dessert.

On Friday evening, we dined at the Harvard Faculty Club, where several "Fls"—immunologist-speak for "children"—graced us with their presence, including Nelson's son, Ade Adamson '09, a Division of Health Sciences and Technology student. Several class members traveled long distances, including a robust California contingent of Karin Gaensler, Heather Peña, Tuyet-Mai Phan, Khiem Nguyen-Phuc, and Richard Rothschild. Surprisingly, although our class was once known for its dancing, lively conversations dominated, and no one took advantage of the dance floor, despite rousing disco music emanating from a boom box.

Our Saturday clambake was not blessed by excellent weather, but hosts Robert and Lynn (Buttolph) Tepper graciously opened their lovely home and provided us with warm hospitality. The "chowdah" and "lobsta" were delicious, but more delicious yet was the opportunity to savor additional moments with classmates and their families. Our only regret was that we have to wait another five years to reunite. ■



19
86

20th—1986 Mark S. Hughes

The HMS Class of 1986 started its 20th reunion with a festive dinner at the downtown Harvard Club on Friday evening. We owe special thanks to our reunion committee members: John Ayanian, Ming Hui Chen, David Cohen, Mark Girard, and Ken Kaye (with plenty of help from Jean Hurd in the alumni office). More than 25 guests attended dinner, traveling from as far away as Bellingham, Washington, and southern California.

It is obvious that we are now in our mid-careers, judging from the number of professors and department chairs populating our class. Two topics dominated the evening's conversation: professional careers and personal lives. We are definitely mid-career! All agreed that time had passed too swiftly, the children are growing too fast, and the evening was far too short to catch up on all activities. Classmates and spouses at the dinner included Elizabeth and Lou Bucky, Dan

Carey, Chris Creatura, Jean Elrich, Carolyn Federman, Mark and Kim Girard, Shelly Greenfield, Plas James and Judith Rochon, Ken Kaye, Linda Leum, Brian and Tina Shaffer, Eric and Carolyn Stein, Dave Swerdlow and Lyn Finelli, Prentice Tom, and Michael Trice.

The rainy Saturday did not dampen our spirits. Once again, Mark and Kim Girard hosted a wonderful picnic at their beautiful oceanfront home in Marblehead. Observing a majestic view of the Atlantic (windswept at times) while enjoying a Woodman's clambake made for an excellent afternoon. There was more time to catch up with classmates and to sit on the porch and enjoy each other's company. In addition to most of Friday night's attendees, several newcomers joined the clambake, including Randy Mills, Greg Pearson, May Reed, and Mary Ann Schran. The afternoon went by far too quickly, and already plans are being made for our 25th reunion in 2011. ■

15th—1991 Zohar Ghogawala

Robert and Eugenia Friedlander graciously opened their Brookline home on Friday for members of the Class of 1991 to catch up on each other's careers and families. Thirty-two classmates and many spouses attended the lovely evening.

Alik Farber spoke about the challenges for physicians in interpreting data from corporate-sponsored trials. Alison May and Jane Liebschutz discussed the satisfaction of serving the underprivileged. Most of us have established our clinical and research practices and can enjoy more family time. The switch from focusing on personal career progress to talking about children was a refreshing change.

Of course, our class is unique in many ways. We talked about the Soviet-American medical student exchange project that we all experienced. Robert Friedlander gave a moving tribute to our three classmates who lost their lives prematurely to depression. He honored Reza Gandjei, David Godley, and Bemy Jelin and the families who mourn their loss.

After 15 years, some of us—such as myself—have lost some hair, but many remain as youthful as ever. David Greenes appeared as energetic as the day he and I started as anatomy dissection partners. Medicine brought us together, and on a summer evening we celebrated each other's lives, which were made possible, in part, by attending HMS. ■

1991

**1996****10th—1996 Jeffrey Schnipper**

Our 10th reunion was a big hit, even if the weather didn't exactly cooperate. People tumbled in from all over the country—northern California was particularly well represented—to catch up, see old friends, and reminisce.

Friday night we kicked things off at Jasper White's Summer Shack in downtown Boston. Over lobster, shrimp, and mahi-mahi we got our first chance to find out whether everything written in the reunion report was really true. Sure enough, we have chosen diverse fields. From academia to concierge practice, South-side Chicago to rural Maine, family practice to super-subspecialist, almost everything under the medical sun was represented. We also met significant others and heard about children, house building, and the many things that occupy us in our "spare" time.

The plans for Saturday included a picnic barbecue at Larz Anderson Park in Brookline. So, it's raining—no problem, right? We can always eat under the enclosed shelter, right? Unfortunately, no, it was taken by a wedding party. And it was raining hard. But after a few phone calls and an heroic effort by Jean

Hurd of the alumni office, we relocated to the Minot Room of Countway Library, where we traded softball for an exhibit from the Warren Anatomical Museum—you have to admit, the skeleton with rickets is pretty cool.

Saturday night's festivities—including a three-course French and Cambodian meal—were held at the Elephant Walk in Cambridge. The spirit of our class was exemplified by the roar in the room and our stay of nearly four hours. The general consensus was that we had aged pretty well and the bonds that tied us together in medical school were still strong.

While the official class photo had only four people in it—who knew you were supposed to go to Friday's events on the Quad?—everyone whose updated email address is with the alumni office will soon receive a link to an online photo album. Those of you who don't get the email should contact the alumni office to update your information and then contact me, at jschnipper@partners.org, so I can send you the link. If you consider yourself a member of the Class of '96 but never received mailings about this event, let the alumni office know you want your "preferred class" to be '96. ■

5th—2001 Gregory Sawicki

Although five years have flown since the Class of 2001 left HMS for the world of residency and beyond, the 5th reunion reminded us of our informal 1997 class dinner at La Famiglia Giorgio in the North End on the night that Body Block ended. Ten of us reconvened there during reunion weekend for an evening of food and fun. The menu still carries the following warning: "Misto Di Pesce is one big plate, if one person can finish this plate by themselves we will give you a T-shirt that says 'I finished the plate.' We know many have tried but there have been few that succeeded." Although attempts were made back in 1997, none of us was brave enough in June for this challenge—or perhaps the years have made us all wiser.

Attending the reunion were Lia (Pierson) Bruner, Christine Chung, Elissa (Slovik) Gaies, Michael Gaies, Peter Lio, Steve Martin, Aliyah Rahemtullah, Jennifer Rodriguez-Pippins, Angela Rogers, and myself.

During the course of the evening, we relived fond memories of HMS and shared stories of our journeys over the past five years, including tales of residency and fellowship. But we also caught up on weddings, children, vacations, home ownership, and other feats achieved by both those present and those absentee classmates from whom we had heard. We all look forward to another gathering in 2011. ■

2001

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